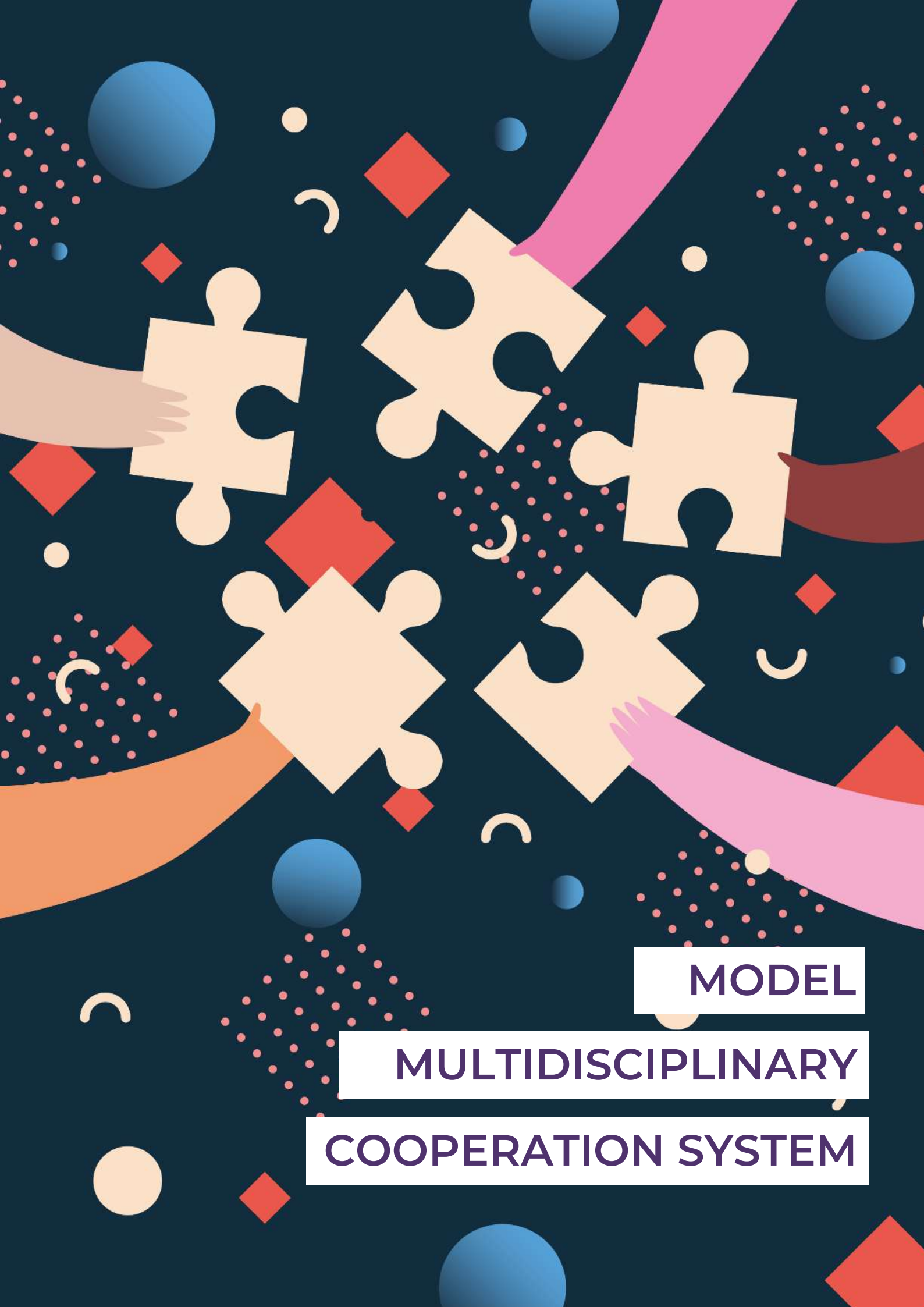

MODEL MULTIDISCIPLINARY COOPERATION SYSTEM

Work Package 3 - Accessible Information Systems: D3.3 Model Multidisciplinary Cooperation Systems

The project aims to improve the accessibility of and integration of child protection systems in criminal proceedings for children with intellectual and psychosocial disabilities victims of crime, as well as to identify good practices on adoption of procedural accommodations in criminal proceedings.[1] This Model Multidisciplinary Cooperation System was developed by the Consiglio Nazionale delle Ricerche (CNR), Victim Support Europe (VSE) and Sabine Lobnig Consulting (SL Consult) and Validity Foundation, with the expertise of Terre des Hommes – Hungary. It was co-funded by the European Union as project "Linking Information for Adaptive and Accessible Child-Friendly Courts" (LINK- 101097047- CERV-2022-DAPHNE). It has also been co-funded by the Foundation of Applied Disability Research (LINKS -Apa2024_058) as "LINKS: Multidisciplinary Assessment and Determination of Procedural Accommodations for Child Victims with Intellectual or Psychosocial Disabilities."

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[1] More information about the project is available here: https://validity.ngo/projects-2/linking-information-for-adaptive-and-accessible-child-friendly-courts/

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TABLE OF CONTENTS

Definitions, Acronyms and Abbreviations

ACRONYMS / ABBREVIATIONS	Description
AAC	Augmentative and Alternative Communication
AI	Artificial Intelligence
AI ACT	Regulation (EU) 2024/1689
ASA	Agency for Social Assistance
AT	Assistive Technologies
BIIR	Court Integrated Information System of Hungary
CEPEJ	European Commission for the Efficiency of Justice
CMS	Case Management System
CNR	National Research Council of Italy
CPS	CPS “Protecting our Children System” digital system of Hungary
CRC	Convention on the Rights of the Child
CRPD	United Nations Convention on the Rights of Persons with Disabilities
EAW	European Arrest Warrant
EIO	European Investigation Order
EU	European Union
FLOs	Family Liaison Officers
ICT	Information and Communication Technology
IEJP	Integrated e-Justice Portal
LITEKO	Lithuanian Courts Information System
MARAC	Multi-agency risk assessment conference
MLA	Mutual Legal Assistance
MMCS	Model Multidisciplinary Cooperation System

NBP	National Briefing Paper
NDR	Portale delle notizie di reato (Portal for crime reports)
ODR	Online Dispute Resolution
PdA	Access Point
PCT	Processo Civile Telematico (Civil Trial Online)
PEAS	Portal for electronic administrative services of the Ministry of Interior
PPT	Processo Penale Telematico (Criminal Trial Online)
PRAI	Pre-trial risk assessment tools
RAI	Risk assessment tools
SICP	Sistema Informativo della Cognizione Penale (Information System for Criminal Cognition)
VRD	Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA
VSE	Victim Support Europe
UCIS	Unified Court Information System

Executive summary

Purpose and Structure of the Model

The Model is both a practical tool and guide to enhance access to justice for children with intellectual and psycho-social disabilities. It sets out a Multidisciplinary Cooperation System (MMCS), which incorporates practice-oriented guidance and a digital infrastructure to better support child victims with and without intellectual or psychosocial disabilities, and their families, throughout the criminal justice process.[2] It provides comprehensive guidelines, ethical considerations, and a digital case management platform prototype for multi-stakeholder collaboration drawing from good practices and guidance collected from 7 EU countries.

The model targets two primary audiences: child protection services and professionals within the criminal justice system. It emphasises interdisciplinary cooperation, a victim-centred and human-rights and inclusive approach. The system is based on two key pillars: 1) individual assessment process for the adoption of procedural accommodations and support measures for child victims, and 2) the development and guidance for the implementation of a digital information system (DIS) to support such processes practically and securely.

Its two key components are:

1. Individual Assessment and Procedural Accommodations (Led by VSE):

- Establishes the legal, ethical, and procedural foundation for identifying and supporting the needs of children with disabilities and barriers they encounter within judicial systems.
- This guide provides a step-by-step guide for conducting individual assessments, including identifying vulnerabilities, assessing their personal situation, implementing procedural accommodations, and maintaining support throughout the full duration of legal proceedings.
- Frames disability through the social and human rights model, stressing environmental and societal barriers rather than the medical deficit.

2. Digital Information System (Led by CNR):

[2] As part of CERV-2022-DAPHNE call, Work Package 3, D3.3

- Outlines a blueprint for a digital platform or case management system to facilitate secure, accessible, and ethical cooperation between stakeholders and access to information for child victims with and without disabilities.
- It integrates the use of assistive and augmentative communication technologies (AAC), artificial intelligence (AI), and encrypted communications to support child participation.
- Integrates risk assessments, secure data handling, AI-driven chatbots, and multi-device compatibility to improve access to information and accessibility of proceedings.

Development Process of the MMCS Blueprint

The MMCS blueprint draws on comprehensive legal reviews, international and EU directives (especially Directive 2012/29/EU), and practical feedback from child advisory boards, national roundtables, and expert stakeholders such as Terre des Hommes and SL Consult. The multidisciplinary team combined expertise from victim support, child, disability and women's rights, assistive technologies, and digital governance.

Development included:

- Collection of good or promising practices from 7 EU national systems.[3]
- Technical assessments of available digital and AI tools in justice sectors.
- Validation of components of "Diana", case management system to facilitate access and flow information between professionals and victims and their families, usability, accessibility, and inclusivity.

Challenges, Limitations, and Innovations

Barriers Identified across7 EU countries:

- Structural exclusion: Children with disabilities are often excluded from justice systems due to inaccessibility and institutional bias.
- Fragmented services: Lack of coordinated responses across sectors hinders continuous support, leads to repeated interviews/overlapping/inefficient processes.

[3] Bulgaria, Czechia, France, Hungary, Italy, Lithuania, Portugal and Slovenia.

- Technological gaps: Courts and support systems lack modern assistive tech integration, and these systems are not integrated, leading to fragmentation of information.
- Data protection concerns: Handling of sensitive information about minors and their disabilities must adhere to GDPR and ethical standards.

Innovative Aspects

- Digital Risk and Needs Assessment Tools: “Diana” includes modules for automatic flagging of red flags, risks/vulnerabilities and barriers.
- Use of AI: Implemented cautiously and in an inclusive manner, for the use of chatbots to access certain information, document generation, and accessibility recommendations.
- Assistive Technologies (AT) & AAC Integration: From low-tech picture boards to high-tech speech-generating devices, MMCS incorporates varied tools depending on the child’s communication needs.
- Role of Victim Navigators and Intermediaries: Adapted from best practices in the UK, these professionals guide children and families throughout their legal journey and/or support courts with communication between children and professionals.
- Inclusive Court Preparation: Strategies include symbolic language development for AAC users and simulated court walkthroughs to minimise anxiety.

Key Principles and Recommendations

1. Individual Assessment as a Legal Requirement

- Based on Article 22 of the Victims’ Rights Directive, individual assessments are obligatory for all child victims.
- The assessment consists of three phases: identification of vulnerabilities/vulnerable situation, in-depth needs and barriers evaluation, and continuous updates throughout the case.
- Assessments should be led by professionals with appropriate expertise, in particular, victim support professionals and coordinated by a single case officer for continuity.

2. Procedural Accommodations

- These are not discretionary and must be age-, disability- and gender-appropriate. Failure to implement necessary procedural accommodations constitutes discrimination under the UNCRPD and the International Principal and Guidelines on Access to Justice for Persons with Disabilities.[4]
- Examples include adapting interview environments, appointing special representatives, using audio-visual testimony, and tailoring courtroom questioning styles.

3. Accessibility Beyond Physical Space

- Accessibility extends to communication (including easy-to-read language), legal procedures, and digital platforms, which need to be based on principles of universal design.
- It should be the default, not the exception. This applies especially to children using AAC who may need adapted symbols or trained interpreters.

4. Multi-Stakeholder Cooperation

- Collaboration between courts, social services, police, medical staff, organisations of persons with disabilities and educators is essential.
- Successful cross-sectoral strategies are illustrated by models like MARAC (UK), Family Justice Centres (Belgium), and Barnahus (Nordic countries).
- Stakeholder mapping, protocols and referral pathway establishment are crucial to avoid fragmentation.

5. Ethical and Data Protection Considerations

- The system must align with GDPR and ensure that victim files, especially those containing sensitive disability information, are securely stored and access controlled.
- Only relevant data should be shared with defence teams and only with the child's informed consent.

Proof-of-Concept: The DIANA system

The "DIANA" system acts as the technological core of the MMCS, demonstrating the practical application of the project's standards and values:

Modules include:

- Data Gathering

[4] See Article 2 and 13.

- Case Management System
- Risk and Procedural Accommodation Assessment
- Expert System & Chatbot
- Encrypted Secure Chat
- Built-in AT/AAC integration
- Cybersecurity: Ensures end-to-end encryption, access logs, and role-based access controls.
- Flexibility: Adaptable to country-specific legal and procedural requirements.

Conclusion and Forward-Looking Vision

The LINK Project's MMCS offers a structured, scalable, and rights-based approach to including children with intellectual and psycho-social disabilities in the criminal justice process, integrated with child protection systems. It champions:

- Child-centred justice that acknowledges intersectional discrimination and specific measures to avoid this.
- Digital transformation grounded in ethical safeguards.
- Systemic cooperation that bridges criminal justice and child protection frameworks.

For future scalability and implementation, the Model recommends:

- Further national-level adaptation of the MMCS model.
- Further development of AI-driven assessment tools.
- Continued training for justice professionals on disability inclusion and trauma-informed support and care.
- Adoption of the "Diana" platform or its components in judicial ecosystems.

By aligning technology, policy, and practice, the MMCS aims to ensure no child is left behind in the pursuit of justice, regardless of their age, gender and disability.

PART 1

Individual Assessment and Procedural Accommodations for Child Victims with Intellectual and Psychosocial Disabilities

01

INTRODUCTION

Children with intellectual and psychosocial disabilities remain among the most invisible and underserved groups within the criminal justice system. However, despite the existence of robust international and European legal frameworks — such as the United Nations Convention on the Rights of Persons with Disabilities (UN CRPD), the Convention on the Rights of the Child (UN CRC), and the EU Victims' Rights Directive (Directive 2012/29/EU) — criminal proceedings across Member States continue to be structurally inaccessible to these children.

Part 1 of this model addresses this critical gap by outlining how criminal proceedings can ensure that child victims with intellectual and psycho-social disabilities are recognised, supported, and protected throughout legal proceedings. The present workplaces emphasis on two core areas: individual needs assessment and procedural accommodations, offering a comprehensive, rights-based framework for tailoring criminal justice systems to the specific needs and situation of children.

Individual Needs Assessment: Recognising Vulnerabilities/Risks and Barriers and Building Trust

Article 22 of the Victims' Rights Directive requires an individual assessment to be conducted for all victims of crime. For children with intellectual and psychosocial disabilities, ensuring that this assessment happens is a crucial starting point—one that must move beyond standardised procedures and become a tool for empowerment and protection. This assessment must ensure that any risks of repeat and secondary victimisation, retaliation and intimidation are identified and that measures for their prevention are formulated and implemented. It must also lead to the adoption of procedural accommodations to promote participate, with due respect of the child's will and preferences. The present report argues that this assessment process is structured in three key phases:

1. Initial Identification: Conducted as early as possible, upon reporting of the crime. This step flags core information such as age, type of disability, communication preferences (e.g. use of augmentative and alternative communication, AAC), family support and potential conflict of interests and immediate risk factors. It serves to guide all interactions with the child from the outset and helps avoid re-traumatisation, prevents risks and adoption of appropriate measures.

2. In-Depth Needs Evaluation: A dedicated case officer leads this phase, with input from a multidisciplinary team that may include psychologists, educators, support

workers, and legal professionals. Using structured but sensitive tools, the team assesses emotional, psychological, physical, and environmental factors affecting the child. Special attention is given to the intersectional vulnerabilities, risks or barriers that arise from age, gender, disability, and socio-economic status.

3. On-going Review and Adjustment: Children's circumstances can change over the course of legal proceedings. Therefore, the assessment must be revisited at key transition points—such as moving from investigation to trial—to ensure that protections and accommodations remain appropriate and effective.

Throughout, the assessment process must prioritise the child's best interests, respect their will and preferences and support child's decision-making in due consideration of their evolving capacities. It must be conducted in a non-intrusive, accessible, and trauma-informed manner. Strict data protection rules must govern the processing, storing and sharing of any information, in full compliance with GDPR.

Procedural Accommodations: Enabling Equal Participation

When children with intellectual and psychosocial disabilities become victims of crimes, they face significant obstacles in navigating usually inaccessible environments in very formalised and rigid legal proceedings. To facilitate children's effective participation in criminal proceedings, procedural accommodations are specific measures that must be implemented to ensure that they can participate effectively and equitably. In line with Article 13 of the UN CRPD procedural accommodations are non-discretionary and have to be provided to enable children with disabilities to effectively enjoy access to justice in an age-, gender- and disability- sensitive manner.

Procedural accommodations need to be defined in line with the individual needs assessment and within the reality of each legal system, and can include some of the following measures:

- Communication Support: Ensuring that AAC tools are available and used appropriately, whether through picture boards, speech-generating devices, or materials prepared in easy-to-read language.

- Adapted Interview Techniques: Avoiding repeated questioning, allowing video-recorded statements, and using trained intermediaries or interpreters to support clear and comfortable communication.

- Accessible Environments: Physical and sensory adaptations to interview rooms and courtrooms, as well as measures like separate waiting areas and other measures to protect the child from encountering the perpetrator or being otherwise exposed to re-traumatisation and secondary victimisation.

- Scheduling Flexibility: Adjusting court dates or interview times to accommodate medical or therapeutic appointments, school routines, or moments of emotional readiness.

- Trained Personnel and Trusted Adults: Involving professionals who understand the child's needs and situation, ensuring consistency of support throughout the proceedings. Where appropriate, parents or caregivers may also be engaged to facilitate communication and trust.

Importantly, procedural accommodations must not be treated as a favour to the child, but as a right. This is an essential requirement for ensuring compliance with legal standards of non-discrimination and participation. It also acknowledges that a child with disabilities is a rights holder who is disabled due to the interaction of external factors/barriers with their impairments.

Conclusion

This section provides a practical and principled roadmap for ensuring that children with intellectual and psycho-social disabilities are not sidelined in their pursuit of justice. Through individual needs assessments and procedural accommodations, systems can move from rigid, standardised procedures to a more responsive, inclusive, and child-centred approach. It calls on practitioners, institutions, and policymakers to reimagine justice not only as a destination but as a process—one that must adapt to the needs of every child, with dignity, safety, and full participation at its core.

02

CHILDREN WITH INTELLECTUAL AND PSYCHOSOCIAL DISABILITIES IN CRIMINAL JUSTICE

Historically, disability used to be defined as any condition of the body or mind that makes it more difficult for the person to do certain activities and interact with the world around them[5]. This definition of disability, also known as the medical model of disability, locates the problem within the individual whose body or mind cannot adapt to the surrounding conditions.

This framing of disability has been replaced by the social and human rights model of disability, which sees the responsibility with society, which disables people and prevents them from full participation. This paradigm shift led to the understanding of disability as a result of the interaction between individuals with a health condition, such as cerebral palsy, Down syndrome and depression, with personal and environmental factors, including negative attitudes, inaccessible transportation and public buildings, and limited social support.[6]'. It was enshrined in the adoption in 2006 of the United Nations Convention on the Rights of Persons with Disabilities (the UN CRPD) – which the European Union (EU) and all its member states have adopted and ratified.

Even though 6% of European children have some form of disability[7], they continue to be left behind despite the near-universal ratification of the UN CRPD[8]. Children with disabilities need to overcome numerous challenges in their daily lives, including a higher risk of falling victim to crime. From an early age, many children with disabilities face an increased risk of exposure to various forms of violence, which in some cases may persist throughout their lives[9]. They face many more barriers than victims in general to be granted access to criminal justice, including barriers to reporting crimes, perception of the severity of the crime, administrative burden or fear

[5] The U.S. Centers for Disease Control and Prevention (CDC), *Disability and Health Overview*, available at: https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html

[6] The World Health Organisation (WHO), *Disability*, available at: https://www.who.int/health-topics/disability#tab=tab_1

[7] UNICEF, Children with Disabilities in Europe and Central Asia: A statistical overview of their well-being, November 2023, p. 14, available at: https://data.unicef.org/resources/children-with-disabilities-in-europe-and-central-asia-a-statistical-overview-of-their-well-being/

[8] UNICEF, *Seen, Counted, Included: Using data to shed light on the well-being of children with disabilities*, January 2022, available at: https://data.unicef.org/resources/children-with-disabilities-report-2021/

[9] UNICEF 2021 REPORT, FOOTNOTE 9

from perpetrators. UNICEF recognises that children[10] face specific legal and social obstacles due to their age. Justice systems often do not recognise or support children as legitimate complainants, whether because of age restrictions or persistent social norms tolerating violence against children or making it socially unacceptable for children to bring adults to court. The compound of all these elements causes children at-risk, such as children with disabilities, to bear the impact of crime, especially hate crime, disproportionally[11].

Consequently, to facilitate access to criminal justice for children with intellectual and psychosocial disabilities, and in particular, those who rely on the use of assisted communication such as alternative and augmentative communication, or AAC (see part 2 section 6), it is fundamental to provide guidance on how to address the needs of victims appropriately and to consider the following issues:

- The needs of children with intellectual and psychosocial disabilities concerning their participation in criminal justice proceedings;
- The process for determining such needs and relaying those needs to the criminal justice system;
- Translating the needs and situation of children into age- and gender-appropriate procedural accommodations, including assistive technologies (see part 2 section 5), and ensuring that criminal justice systems are equipped with the necessary tools to implement these accommodations, as well as training the involved parties accordingly.

[10] Legally speaking, a child is defined as a person who is younger than 18 years under the UNCRC. Although, there are significant differences in cognitive abilities of children depending on their age and, some studies also suggest, their gender – in regard of the latter, see e.g. Ardila A., Rosselli M., Matute E. and Inozemtseva O., Gender Differences in Cognitive Development, June 2011, Developmental Psychology 47(4):984-90, available at: https://www.researchgate.net/publication/51482462_Gender_Differences_in_Cognitive_Development. Nonetheless, due to the limitations posed by a number of legal systems, the present project has been limited to looking into the access to criminal justice for children aged 12 to 17 years.

[11] UNICEF, Prioritising access to justice for all children in EU neighbourhood & enlargement policies and relations with Central Asia, September 2014, available at: https://www.unicef.org/eca/media/1041/file/report_prioritising_access_to_justice_for_all_children.pdf

2.1 Needs of children with intellectual and psycho-social disabilities

Individual needs of victims are exactly that – individual. They depend on several elements which are hard to foresee. Victim support is not a one-size-fits-all service. Yet, there are commonalities between the needs of victims, and based on such commonalities, the needs of victims can be largely grouped into five main categories: respect and recognition, support and information, protection, access to justice and compensation and restoration. Evidence indicates that each victim will have some of those needs[12].

Based on this understanding, national victim support frameworks have been developed around several criteria, including the type of crime (e.g. victims of cyber-crime or victims of terrorism may have some specific needs that are characteristic of the type of crime that affected them); the circumstances of the crime (e.g. intimate partner violence); or personal circumstances of the victim (e.g. the victim's age or disability status). Understanding the needs of specific groups of victims can help better organise national victim support and ensure appropriate responses to the needs of victims who share common characteristics and needs.

The discrimination that children with psychosocial and intellectual disabilities may face is intersectional. They are at risk due to their age, gender and their disability, with the potential compounding of these with other types of protected factors. These elements need to be acknowledged, and national systems built to ensure that individual assessments, once conducted, can be responded to efficiently and effectively.

[12] Violence against children with disabilities, Fundamental Rights Agency, 2015, p.85. See also, Langdon, P. E., & Murphy, G. H. (2021). Working in community settings with people with learning disabilities and autistic people who are at risk of coming into contact with the criminal justice settings and Pushppasri, S. K. (2023). Psycho-Social Impact of Family and Society on Juvenile Delinquents. Indian J. Integrated Rsch. L., 3, 1.

2.2 Needs of child victims of crime

The Victims' Rights Directive (VRD)[13] identifies and sets out measures to ensure the protection and participation of child victims. The Directive underlines that 'children's best interests must be a primary consideration, in accordance with the Charter of Fundamental Rights of the European Union and the United Nations Convention on the Rights of the Child (CRC)'[14].

This might be done through the institution of child-friendly proceedings focused on reducing the risk of secondary victimisation through:

- The use of child-friendly and accessible premises;
- Allowing video-recording of children's testimony to avoid the need for repeated questioning;
- Involving experts with knowledge and experience of disability to facilitate the child's interaction with the criminal justice system[15];

UNICEF recognises children's need for representation through their parents or guardians and legal professionals. They also recognise that the rights of children victims and witnesses to information both the criminal proceedings and their outcome remains inappropriate. Therefore, they demanded to (a) develop protocols that define who is responsible for keeping the child informed during each step of the process and (b) issue user friendly material for children and their parents or legal guardians. [16]

13 Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA

[14] Recital 14 of the Victims' Rights Directive

[15] UNICEF, Justice system responses to child victims and witnesses in Europe and Central Asia, October 2020, p. 9, available at: https://www.unicef.org/eca/media/14536/file. "'Limiting secondary victimization for child victims and witnesses requires avoiding multiple interviews about the event to the maximum extent possible. The child's initial interview is of paramount importance for collecting evidence about what happened, as the quality of the child's statement often declines afterwards. A high quality first interview will increase the quality of evidence collected overall, as well as reduce the need for subsequent interviews that can be traumatic for the child. The practical value of child-sensitive approaches is a powerful argument for convincing otherwise reluctant judicial professionals to implement such measures. […] The status of interviewers is another important component of child-friendly hearings. The use of nonlegal court experts, such as psychologists or pedagogues, to interview children has proven critical to ensuring quality testimony, as long as their role is well defined in legislation. Beyond the hearing room and equipment, the quality of testimony largely depends on trust between the child and the interviewer and the latter's ability to adequately pose questions for forensic purposes."

[16] UNICEF, Justice system responses to child victims and witnesses in Europe and Central Asia, October 2020, p. 11-12, available at: https://www.unicef.org/eca/media/14536/file

Additionally, in the latest UNICEF global report on children with developmental disabilities, it is acknowledged that *"the voices of children and young people with developmental disabilities and their families are often not heard, and their rights and needs are often not protected in legal and policy frameworks."*[17]

'Limiting secondary victimization for child victims and witnesses requires avoiding multiple interviews about the event to the maximum extent possible. The child's initial interview is of paramount importance for collecting evidence about what happened, as the quality of the child's statement often declines afterwards. A high quality first interview will increase the quality of evidence collected overall, as well as reduce the need for subsequent interviews that can be traumatic for the child. The practical value of child-sensitive approaches is a powerful argument for convincing otherwise reluctant judicial professionals to implement such measures. […] The status of interviewers is another important component of child-friendly hearings. The use of nonlegal court experts, such as psychologists or pedagogues, to interview children has proven critical to ensuring quality testimony, as long as their role is well defined in legislation. Beyond the hearing room and equipment, the quality of testimony largely depends on trust between the child and the interviewer and the latter's ability to adequately pose questions for forensic purposes.'

Nonetheless, on the margins of the Summit of the Future (2024), the United Nations Committee on the Rights of Persons with Disabilities welcomed the establishment of the Global Digital Compact that shall improve the digital inclusion of persons with disabilities and their accessibility to public services.

The Committee notes with appreciation that the Global Digital Compact (GDC) also satisfactorily reflects accessibility provisions. It calls Member States to reinforce this commitment by reference further the digital inclusion and accessibility provisions of the

[17] UNICEF, Global Report on Children with Developmental Disabilities, p. 86, available at: https://www.unicef.org/media/145016/file/Global-report-on-children-with-developmental-disabilities-2023.pdf

Convention on the Rights of Persons with Disabilities (CRPD) and sustainable development goals, indicators, and targets related to persons with disabilities and older Persons. Given their demographic weight and specific digital accessibility requirements, it is important that persons with disabilities are identified throughout the GDC and not only implicitly referenced as “marginalised populations.” This is particularly relevant to the GDC, as digital accessibility innovations for persons with disabilities can positively impact social and economic inclusion if adequately promoted.

To facilitate crime reporting, child victims with disabilities, as well as their caregivers or persons the child trusts, need to have access to information about their rights in accessible formats including AAC symbols. They have to be able to recognise the signs of violence and feel free to express their feelings after having been subjected to crime. For example, according to the LINK project’s National Briefing Paper developed by KERA [18], the lack of crime reporting is also caused by children’s limited understanding of what constitutes violence and the acceptable limits of human interaction, where simple misunderstandings or disputes end and crime begins.[19] Children with psychosocial disabilities must be able to communicate about crime as they see fit and be supported through the process of sharing their experience, which can also include pain, anger, and the inability to understand what they are going through accurately. Part 2 of this document will explore ways to implement accommodations and organise this support.

2.3 Needs of child victims with psycho-social and intellectual disabilities

In addition to their age, children with disabilities will have different needs depending on the type of disability and the related circumstances (see section 2 part 5.4). Lack of accessibility is one of the most frequent issues people with disability deal with daily. Persons with intellectual and psycho-social disabilities often have difficulty accessing information and communication because they require easy-to-read formats

[18] National Briefing Paper, Bulgaria, LINK project, Validity Foundation, available at https://validity.ngo/wp-content/uploads/2024/06/KERA_NBP_EN.pdf

[19] Such initiatives are described in the Fundamental Rights Agency report on Violence against children with disabilities, 2015, p. 88-89

or augmentative and alternative modes of communication (details can be found in Part 2).

They often face barriers when attempting to access services due to prejudices and a lack of adequate training for the staff[20]. This is particularly true for legal proceedings, which generally employ juridical jargon and technical language that is rarely accessible to the public, regardless of their intellectual abilities. This is problematic concerning Article 9 of the UN CRPD, as well as the VRD, which suggests that 'information and advice provided by competent authorities […] should, as far as possible, be given through a range of media and in a manner which the victim can understand. Such information and advice should be provided in simple and accessible language,' taking into consideration the victims' 'age, maturity, intellectual and emotional capacity, literacy and any mental or physical impairment.[21]'. The right of the victim to understand and be understood, as enshrined in Article 3 of the VRD, may, therefore, be particularly challenging for children with intellectual and psychosocial disabilities if accessibility of proceedings is not ensured for them. Accessible media may include text, graphics, videos and audio files, as well as documents in plain and easy-to-read language.

Furthermore, children with disabilities are often placed in institutions – which may complicate access to representation (as their guardianship situation may be unclear and, in some cases, relegated to the institution exclusively)[22]. It has even been found that EU structural funds have been used for the segregation and discrimination of children with disabilities and Roma children through institutionalisation.[23]

Institutionalisation, seen as 'a pervasive culture of depersonalisation, lack of privacy, inactivity, inadequate food and heating, poorly trained and supervised staff and isolation from community activities, is still unfortunately a common[24]' practice across the EU. Violence often occurs because of the closed nature of these centres, the lack of monitoring mechanisms and the lack of specialised training for caregivers[25].

[20] UN CRPD Committee, General Comment No. 2: Article 9, Accessibility, 2014, UN Doc No. CRPD/C/GC/2 §7 available at: https://documents.un.org/doc/undoc/gen/g14/033/13/pdf/g1403313.pdf

[21] Victims' Rights Directive, recital 21

[22] Violence against Children with Disabilities, Fundamental Rights Agency, 2015

[23] "Wasted Time, Wasted Money, Wasted Lives... A Wasted Opportunity?", European Coalition for Community Living, 2010

[24] Brown H., CoE, 2003, p. 31

[25] FRA report on Violence against children with disabilities in the EU, 2016

Such environments make it particularly difficult for children to gain access to justice, in particular regarding victimisation they may suffer in the institution itself[26].

There is a difference in how different groups of children with disabilities experience victimisation. UNICEF recognises that when it comes to child victims, attention to specific groups and gender remains too limited. Equal access for children with disabilities is insufficiently taken into account. Possible discriminatory practices against children from minority groups have not received specific attention. At the same time, gender-sensitive approaches may be applied to adult women in contact with the law but are overlooked with children[27].

Children with psycho-social and/or intellectual disabilities experience crime differently based on their disability and gender. This also makes them prone to different types of crime. A UN study revealed that sensory impairments can make women and girls with disabilities more vulnerable to crime because of the perception that they would not be able to complain[28]. Similarly, FRA found that girls with psychosocial or intellectual disabilities can be perceived as “defenceless” or “too emotional/sensitive by nature” because of traditional stereotypes about girls and women, to which disability-related stereotypes are added[29].

According to the UN Special Rapporteur on Violence against Women and its causes and consequences, girls with psychosocial and cognitive disabilities are more often subjected to violent acts such as forced sterilisation, sexual abuse or coercive birth control measures, because of their dependency on others for physical care tasks, and them being perceived as “asexual beings”.

Although more likely to fall victim to crime, girls with disabilities are highly likely not to receive access to support. Because of the lack of staff training, people in direct contact with girls with psycho-social and/or cognitive disabilities, such as carers, educators or social workers, may not recognise the signs that the child has been

[26] ENIL, UN findings on Hungary, accessed at https://enil.eu/un-finds-hungary-responsible-for-grave-and-systematic-violations-of-disability-rights-condemns-mass-institutionalisation-funded-by-the-eu/
[27] https://www.unicef.org/eca/media/14536/file
[28] Report of the United Nations on Sexual and reproductive health and rights of girls and young women with disabilities, 2017, paras. 34-37
[29] Violence against children with disabilities, Fundamental Rights Agency, 2015

subjected to violence, be it physical or emotional. Emotional abuse, such as hate crimes, is even harder to identify in the case of child victims with communication barriers or speech impairments.

In addition, when a girl or a woman with intellectual or psycho-social disabilities reports a crime, their credibility is often questioned. Consequently, crimes often go unreported, and report and evidence dismissal are common practice.[30]

2.4 The individual assessment[31]

Historically, in many countries, the police focused on specific groups of victims, such as victims of domestic violence, gender-based violence, trafficking or terrorism. This approach was beneficial for victims falling into these groups; however, failed to address other vulnerable victim groups, in particular due to the victims' expected role in criminal proceedings – such as whether their report is detrimental for the proceedings to continue, if they are required to testify or otherwise be involved in the proceedings (e.g. as *partie civile* or similar).

This is why the VRD's Article 22 introduced the obligation to conduct an individual assessment for all victims of crime, recognising that victims' vulnerabilities/risks/barriers have several elements, which previously have not systematically been taken into account. The aim of Article 22 is twofold: to address the narrow focus on the needs of specific groups of victims and to ensure that appropriate protection measures are implemented.

The intended outcome is twofold: to reduce the negative consequences of the crime for the victim and prevent further victimisation through reporting the crime. Victims who feel safe and protected will be able to give better evidence and better participate in criminal proceedings.

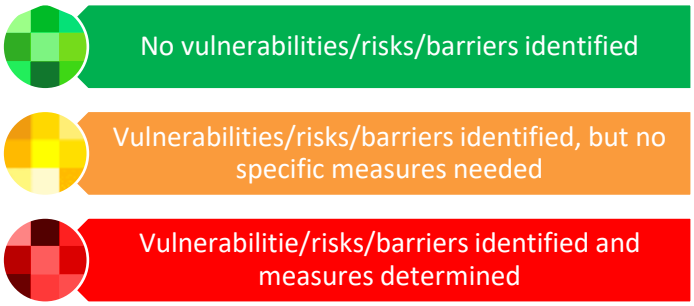
The Directive requires individual assessments to be carried out for every victim of crime. However, to respond to the needs of children with disabilities, the system

[30] Gender-based violence against women and girls with disabilities report, FEPS, p. 3, 2015

[31] The chapter is based on the previous unpublished work that Victim Support Europe has done on advancing the implementation of Article 22 of the Victim Rights' Directive.

needs to recognise their specific needs; barriers they might encounter and adopt the necessary supportive, protective and procedural accommodation measures (See part 2 for examples).

A two-level system, in which every victim is evaluated for the adoption of these measures based on a list of indicators, has been advocated by VSE. The first step in this system involves identifying vulnerabilities/risks/barriers. In the second step, victims identified will undergo a more detailed assessment to determine the necessary measures.



The physical and emotional safety of the victim is secured, along with the adoption of procedural accommodations to support participation and decision-making. For instance, if they need to testify via videoconferencing, need the support of a speech therapist or an interpreter, etc.

2.4.1 Step 1: Identifying vulnerabilities/barriers/risks

The initial **individual assessment** needs to cover the following:

- identification of the child's age, gender and disability;
- *prima facie* communication and accessibility needs (e.g. uses a wheelchair, has difficulties verbalising, needs speech-to-text transcription, uses AAC technology, etc.);
- identification of the primary support person and if possible, names of experts who are known to the child and who might facilitate the assessment process (e.g. psychologists, teachers, speech therapists and others whose opinions might be relevant to the process);
- additional elements that come to light during first interactions.

This initial assessment must be included in the case file to protect the child, thereby limiting access to the child's assessment by other parties. It will identify the child's vulnerability and personal situation and facilitate the transition to the second step, which is the in-depth needs assessment. It shall be presumed nonetheless that children always have, at the very least, protection needs, thus making in-depth assessment necessary.[32]

2.4.2 Step 2: In-depth needs assessment

It is up to the Member States to determine which institution is responsible for this process. In Sweden, for example, this second assessment step is entrusted to trained victim support specialists within the police. In the Netherlands, following the initial assessment, the police usually refer victims of violence to be assessed by Victim Support Netherlands (*Slachtofferhulp*).

When it comes to children with disabilities, several institutions may be involved in the needs assessment, including institutions responsible for the welfare of children, those in charge of coordinating support for persons with disabilities, as well as victim support services. Recent studies indicate, though, that at the intersection of experts for cognitive disabilities and experts in victim support, the latter may be better positioned to take the lead.[33].

Depending on the complexity of the child's needs and the necessary procedural accommodations, a task force may be required to implement all measures successfully. Such task forces may also have further competencies depending on the national criminal system and the victim support framework.

In any case, the primary coordinator must be identified.

[32] Article 22 (4) of Directive 2012/29/EU.

[33] Oresbro University is currently conducting research on 'Collaboration to Support persons with cognitive disabilities who are victims of violence in close relationships'. The research is currently ongoing and the results are pending finalisation and publication. However, some early findings indicate possible leadership to best be placed with victim support professionals. Klint F and Gustafsson J., as presented at 2024 EuroCrim conference.

Single contact points

Responding to the need of victims may be a complex task involving a number of actors. It can only be assumed that this response becomes more complex with the intersection of vulnerabilities – as is the case with child victims with intellectual or psychosocial disabilities, especially factoring in the potential intricacies and usual long duration of any criminal proceedings.

Some police forces, such as in the UK, Sweden and some other countries, provide for the function of family liaison officer (FLO). FLOs are police officers whose main task is to ensure that victims and their families have a single continuing point of contact with the investigation teams, who keep them informed about the progress of the proceedings. The downside of FLOs is that their engagement stops when the investigation is closed. Moreover, their deployment is usually limited to the most serious crimes – such as homicide or sexual violence.

In addition to FLOs, who are primarily investigators and whose engagement with the family is supposed to facilitate the investigation, it may be worthwhile for authorities to explore the possibility of working with victim navigators.

Besides contact points or focal points, victim navigators are professional victim support workers who advise the victim about their rights and provide relevant guidance to the investigations as well. They connect the victim with criminal justice authorities, keeping the best interest of the victims at the forefront of their work, while ensuring that they also receive the necessary emotional, physical and psychological assistance.

The concept was developed in the United Kingdom, the United States, Canada and Australia. Often the role of the victim navigator overlaps or intersects with the functions known as victim support persons or victim advocates, however, its important function is being the one point of reference for the victims to navigate through the criminal justice system, as well as other legal and administrative frameworks relevant for their recovery (e.g. compensation, insurance claims, identifying qualified professionals who can support them etc.).

The victim navigator is a role that is external to the police or other institutions – usually provided by the civil society, with the aim to achieve two main goals: help victims understand the intricacies of the legal system and guide them through it; and help the authorities understand the needs of the victim and respond to those. There are some very successful victim navigator programmes for some specific groups of victims, such as for victims of terrorism or victims of modern slavery.

The involvement of single contact points who keep in touch with the family shall also be determined by the type of a victim's disability and special assistance needs, such as AAC usage.

It is essential to ensure the continuity and sustainability of this coordination throughout the entire span of criminal proceedings, ideally by appointing not one institution but a single person to serve as the primary point of contact and remain responsible for the individual assessment process for the child victim.

The in-depth assessment serves to identify the specific needs of the child victim and to plan the necessary measures to prevent retaliation, intimidation, repeat and secondary victimisation, as well as procedural accommodations. This can be done with the help of a questionnaire (as outlined in Annex I), used in a non-intrusive and casual conversation, engaging the child victim as well as potential caregivers or other persons who might have information important to assess the child's needs and inform recommendations for procedural accommodations.

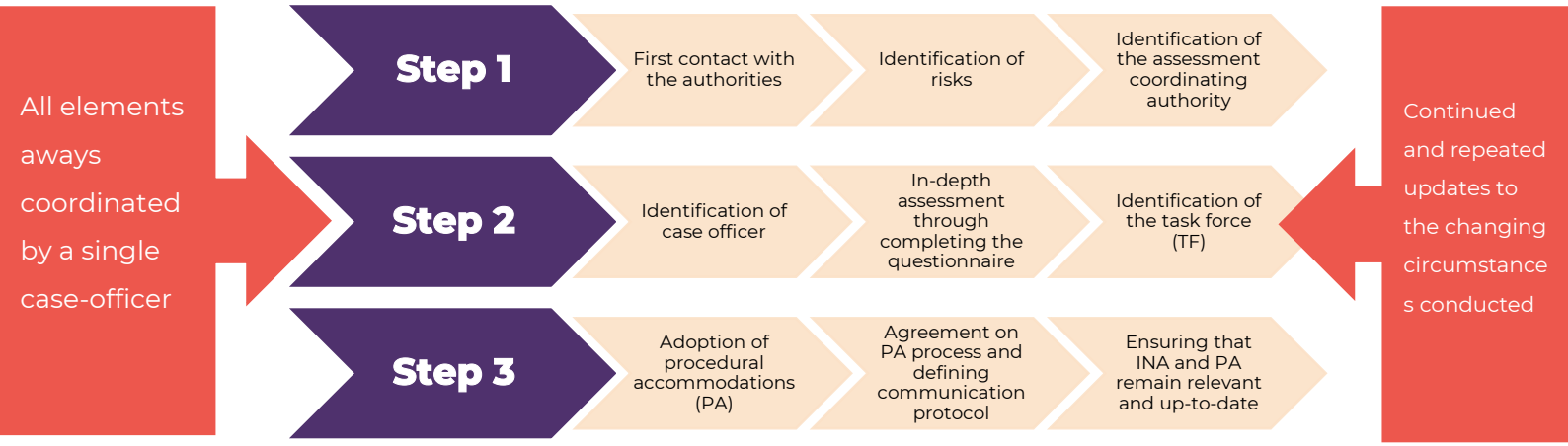
Depending on the child's particular situation, the in-depth assessment may involve different professionals, including representatives of law enforcement and/or judicial institutions, as well as experts such as psychologists, speech and other types of therapists, medical professionals, behavioural scientists, legal experts, social workers, cultural mediators etc. When building the assessment team, an effort should be made to consult and possibly collaborate sustainably with experts who have already been in contact with the child before the crime, as they might already have developed a relationship of trust with the child. Following these initial consultations, an expert team should be established, the frequency of team consultations decided,

and the need to engage the child or their parents/guardians/carers in the process evaluated.

Based on the completed questionnaire, the expert team can assess the child on the following elements **relevant to the child's interaction with the criminal justice system**:

- child's existing support and care team and the possibility of including them in the process of identifying and responding to the child's needs as a matter of preference;
- child's cognitive abilities and related implications (which questions the child can or cannot respond to, how to formulate questions when interrogating the child, etc.);
- any sensory triggers and the need to adapt the physical environment to the needs of the child;
- accessibility needs in general, and communication needs in particular, including the support arrangements in response to those needs;
- family situation and related vulnerabilities (for example, are parents going through a contentious divorce which might affect custody issues and the potential procedural implications – e.g. need to change the address for correspondence, but also practical, such as the primary support person; substance abuse by family members and related risks and implications etc.);
- financial issues and their potential consequences;
- specific environmental needs/risks (e.g. living in a rural area without easy access to transport, living in an institution, having been victimised by neighbours, etc.);
- healthcare schedule, care arrangements and daily/weekly routine;
- any assistive technology used and the specific technical requirements in that regard;
- any gender-specific needs (e.g. fear or different communication needs depending on the gender of the interlocutor, etc.);

- any other issues relevant to the child's interaction with the criminal justice system.



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2.4.3 Step 3: Continuous update

The in-depth assessment will conclude with procedural accommodations that need to be implemented at various stages of the criminal proceedings.

It is to be expected that following the initial police report, the case will be investigated and transferred from the police to the prosecution and then eventually to the competent adjudicating body. This transition must contain the case file, the victim's file, and the needs assessment.

Victim file as part of the case management system

It is important to ensure that the content of the individual needs assessment, including any details pertaining to the victim's vulnerabilities, their personal situation and any risks is kept separately from the rest of the criminal file and accessed only on an as-needed basis.

Victim file should, as a rule, not be made available to the defence and only elements that are relevant and strictly necessary to be shared with the defence will be disclosed to the defence or anyone else who does not have a justified need to have access to the

file, under the threat of sanction.

Any case-management system must be built so as to enable strict control of who can have access to the file, punctual log of anyone accessing it, modifying or sharing the file, as well as strict compliance with any privacy and confidentiality requirements, but also in view of the best interest of the child.

The assigned person to coordinate the needs assessment (e.g., the case officer) is responsible for ensuring that the needs of the child victim are addressed promptly and through appropriate intervention at all stages of the criminal proceedings. However, it may be possible that, for procedural purposes, they can formally report to the prosecutor, judge, or other officials responsible for overseeing a specific phase of the proceedings.

Once criminal proceedings are finally concluded (regardless of the case's outcome), the coordinator or case manager must compile a transition plan that ensures follow-up with the victim, depending on the circumstances. Should the case be concluded by the imposition of a custodial sentence on the offender, it may be necessary to plan for the offender's release and inform the victim about this or other developments regarding the offender's release.

Where one accommodation is made, such as video recording and conferencing, it may be important to add a second tier of accessibility features to that. Such additional features may be found in Part 2 Sections 5 and 6.

2.5 Timing of individual assessments and the notion of criminal proceedings.

The obligation to conduct an individual assessment begins when the criminal complaint is submitted to the competent authority of a Member State. In most cases, it is the police that will conduct the initial assessment. This needs assessment must be continuously updated to ensure that changes in the victims' circumstances are accurately recorded and effectively addressed throughout the proceedings.

The individual assessment can also be conducted by other public authorities in direct relationship with the child or charge of caregiving or custody of the child, such as a child's school or residential institution, as soon as they become aware that the child has fallen victim to harm or a crime that needs to be reported.

When the public authority (school/ after-school/ residential institution) reports the crime in the name of the child, adding the individual assessment of the child victim to the formal complaint can be helpful for law enforcement officers who come into contact with the child for the first time and need to understand how to handle the investigation with the child's best interest in mind.

Secondary victimisation can happen through a suspect threatening the victim or through the victim's participation in proceedings, e.g. a police interview. Therefore, an individual assessment should take place at the **earliest opportunity** after the submission of a complaint, such that

1) the victim's exposure to secondary and repeat victimisation, intimidation, and retaliation is minimised and that

2) there is the maximum likelihood that victims who need them **receive special measures** in time to avoid or mitigate harm.

The individual assessment aims to recognise and cater to a victim's vulnerabilities during the proceedings. Protection based on the assessment is usually not about the victim's physical safety but rather about improvements in the process that make going through the proceedings less traumatic for the victims.

For example, suppose it is brought to the attention of the police officer that the child victim is sensitive to loud sounds or is an AAC user. In that case, this needs to be noted in the individual assessment and brought to the attention of any other party involved in the proceeding, as well as those with direct contact with the child. Sometimes, the necessary protection measures will require resources – such as providing specific technology (e.g., captioners for children who are hard of hearing). Still, accommodating the environment can often help (e.g., making sure that loud sounds can be avoided).

2.6 Identifying vulnerabilities/risks/barriers

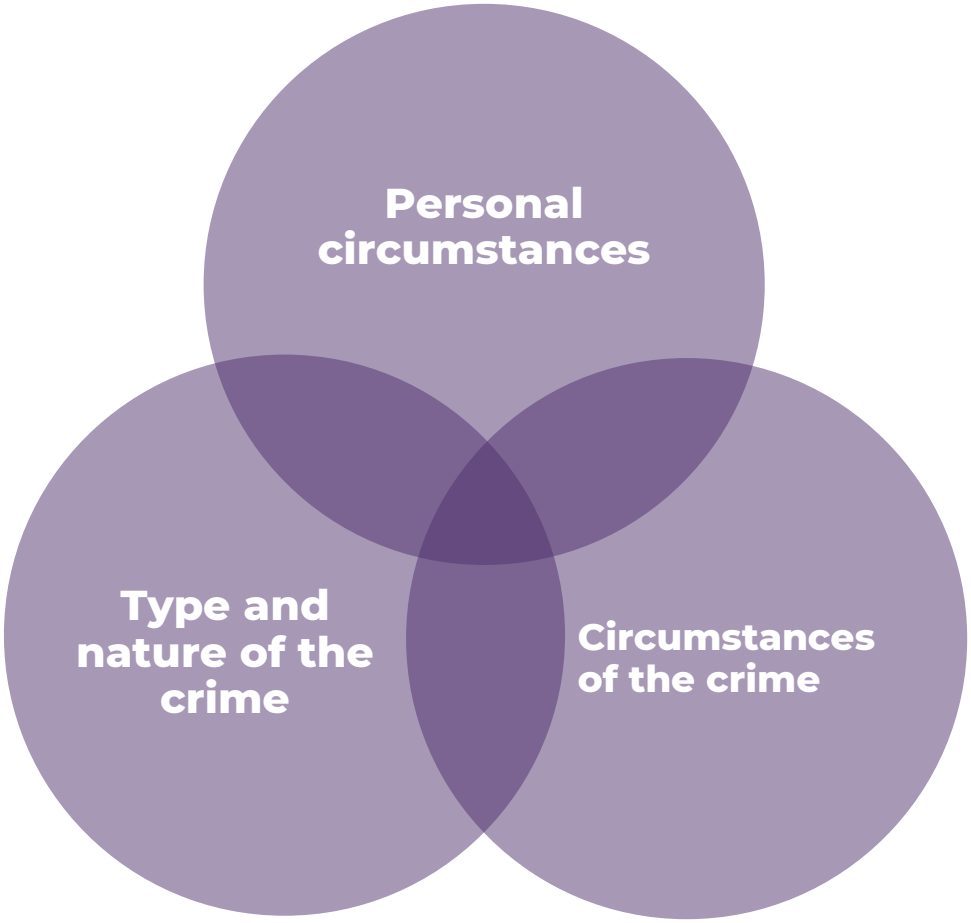
Article 22 of the VRD outlines three areas from which potential vulnerabilities might arise:

1) personal circumstances of the victim;
2) type and nature of the crime, and
3) circumstances of the crime.

Understanding the child victim's personal circumstances and situation is important to respond appropriately. For example, if a victim follows a specific treatment or therapy schedule, it may be necessary to adjust the examination timing and duration to accommodate their availability.

Similarly, with the **type and nature** of the crime. The VRD identifies, for example, child victims of sexual violence or human trafficking[34] as particularly vulnerable to and in danger of secondary victimisation during proceedings. The more violent and intense the crime is, the higher the level of trauma, and the harder proceedings might become for the victims.

[34] In addition to identifying victims with disabilities as potentially particularly vulnerable, Article 22(2) of the VRD identifies victims of the following crimes as potentially in need of specific protection measures: terrorism, organised crime, human trafficking, gender-based violence, violence in close relationship, sexual violence, exploitation, and hate crime.



Regarding the **circumstances of the crime,** it is necessary to consider whether the crime was committed in plain sight or in the intimacy of the victim's home. Have the victim's pre-existing vulnerabilities been used against them to commit the crime? What motivated the crime, and how did it affect the victim?

In many cases, a combination of these factors will be present. The factors outlined above intersect in ways that create compound and individualised barriers to justice, thereby necessitating specific procedural accommodations to uphold fairness and legal accessibility. Children with disabilities, children from poor backgrounds or other members of marginalised groups, for example, are more likely to be exposed to crime[35]. In addition, children with disabilities are often more likely to be victimised by the persons they trust the most, such as their parents, carers or peers[36]. Having a vocabulary to describe such scenarios will be essential for those without speech and communicating via AAC (see section 6 and the symbols for access to justice created by the LINK Project).

[35] Violence against children with disabilities, Fundamental Rights Agency, 2015, p. 82
[36] Violence against children with disabilities, Fundamental Rights Agency, 2015, p. 11-12

There may be differences for victims of sexual crime in urban or rural areas. Stigma and prejudice have a greater impact on victims from small villages. Equally, those who have experienced bullying may require adequate protection.

When children with disabilities are exposed to hate crimes committed by their peers, it may have consequences not only for the children involved but also for their parents and may impact the entire community. If, in addition, there is a power imbalance between the parents of the victim and the perpetrator(s), the issue may become particularly complicated, having negative consequences for all family members.[37] Suppose the perpetrator is (related to) a leader or a public figure. In that case, this may expose the vulnerable child further to public scrutiny, bringing them into the spotlight and drawing the media's attention. In such cases, exposing the crime may snowball and fundamentally change the life of the victim and the entire family.[38] Following the intersectional approach, a victim's potential vulnerabilities can multiply and can increase the risk of further victimisation. Detailed, accurate and continuously updated individual assessments may protect victims from such negative consequences of participating in criminal proceedings.

2.7. Setting out measures for protection

Article 22 of the VRD requires that victims are protected from repeat and secondary victimisation, intimidation and retaliation.

Repeat victimisation means that the victim may be at risk of suffering the same crime again. This renewed victimisation may happen through the same perpetrator or from a different person, whether there is a relationship with the first perpetrator or not. Risk factors for repeat victimisation include previous victimisation, income level, previous

[37] Turner, H. A., Vanderminden, J., Finkelhor, D., Hamby, S., & Shattuck, A. (2011). Disability and victimization in a national sample of children and youth. Child maltreatment, 16(4), 275-286

[38] Assink, M., Van der Put, C. E., Meeuwsen, M. W., de Jong, N. M., Oort, F. J., Stams, G. J. J., & Hoeve, M. (2019). Risk factors for child sexual abuse victimization: A meta-analytic review. Psychological bulletin, 145(5), 459. 3)Bryan T., Pearl R., Herzog A. (1989). Learning disabled adolescents' vulnerability to crime: Attitudes, anxieties, experiences. Learning Disabilities Research, 5, 51–60.

convictions, abuse of substances, unemployment, etc.[39] In case of sexual crimes or crimes within family or intimate partnerships, include previous victimisation, previous use of shelters, substance abuse or self-blame for victimisation, among others[40].

Retaliation refers to deliberate negative actions taken against a person as a direct consequence of their decision to report a crime or seek justice. While it may resemble repeated victimisation, retaliation is distinct in that it is inherently linked to the victim's engagement with the justice process.

Intimidation involves threats of negative actions or consequences intended to dissuade a victim from reporting a crime or participating in justice processes. While similar to retaliation, intimidation is limited to threats, whereas retaliation entails the actual carrying out of such actions. Both may be directed at the victim, their family, or someone close to them.

More difficult to identify and prevent is secondary victimisation, which may result not only from victim-blaming attitudes or insensitive behaviour by authorities, but also from the inherently distressing nature of recounting traumatic events or being required to give testimony . A typical example of secondary victimisation is asking a victim of rape what she was wearing or asking her why she was walking alone in the street at night. In this way, the responsibility is moved away from the perpetrator who carried out the attack or from the state who failed to prevent the assault and put on the victim.

General protection measures often include having separate waiting areas for victims and perpetrators or installing a screen to prevent victims from seeing the offender. Waiting areas need to be appropriate for those with disabilities, and some aspects, such as screens, may be well suited to accommodate the needs of those with psychosocial disabilities (some of these considerations are included in Part 2 Section 7). However, more important than these physical measures are the attitude and awareness of authorities toward victims' needs. Addressing victims' fears, concerns and difficulties in the proceedings is crucial.

[39] L. van Reemst, T. F. C. Fischer & J. D. M. van Dongen, Risk factors for repeat victimization: A literature scan (Summary), 2013, available at: https://repository.wodc.nl/bitstream/handle/20.500.12832/2038/2318a-summary_tcm28-72966.pdf?sequence=3

[40] Ibid.

2.8 Child's consent and cooperation

An important element of the individual assessment is the victim's consent and cooperation. Sometimes victims can be, for example, more worried about testifying in front of their loved ones than in front of a broader public or even the perpetrator – as they might be asked to disclose things they do not want their loved ones to be aware of. This may become a potential risk for causing further harm to the victims in the proceedings.

For children with intellectual or psychosocial disabilities, it is particularly important to find appropriate means of communication. They may rely on support tools such as pictograms or AAC (see Part 2, Section 6 for examples) or require an interpreter or intermediary to support their communication.

In some cases, family members, in particular parents of children with disabilities, might be the first choice in the facilitation of communication, and the victim may not have the confidence to talk to a professional. The victim's preferences must be identified and followed consistently throughout the proceedings.

2.9 Collaboration paths in a multi-stakeholder system

To foster effective and constructive collaboration among different agencies and other stakeholders, planning and establishing collaboration paths in advance is crucial. Some collaborations come more naturally than others, but it is essential to work towards establishing a broad coalition of authorities, organisations, and individual experts who can be involved in the needs assessment, identification, and implementation of protection measures and procedural accommodations. Two examples are:

Multi-agency risk assessment conference (MARAC - United Kingdom)

MARACs are multi-agency meetings set up with the aim to share information and devise plans for high-risk victims of domestic abuse. They usually are police-led and they also involve Independent Domestic Violence Advisors (IDVAs), child protection and healthcare professionals, as well as probation services[41].

The disability of the victim is one of the risk factors included in the risk assessment that the case officer has to perform, which could trigger the multi-agency response in their best interests. Unlike Barnahus, this is not an “under the same roof” system, but it yields satisfactory results, since smooth coordination among agencies and practitioners does not need to be conditioned by sharing the same premises. For this purpose, protocols for information sharing and cooperation workflows are set up at governmental level.

It is important to note that victim or victim representative are not a part of MARAC, but are closely consulted to establish communication with the victim and to ensure that victims’ needs are identified and addressed.

[41] (Research into Multi-agency risk assessment conferences – MARACs, Home Office Violent and Youth Crime Prevention Unit and Research and Analysis Unit, 2011)

Without established multi-agency collaborations, it is essential to conduct a stakeholder analysis and establish pathways to ensure cooperation with all relevant institutions, authorities, organisations, and individual experts. This analysis should include:

- Mapping – a step in which all relevant authorities, institutions, service providers, and other relevant actors are identified. Mapping should aim to identify any gaps in the ability to respond to the needs of child victims and suggest solutions to overcome these gaps (e.g. if the child finds themselves in a region in the country where victim support services do not exist, there should be a protocol to ensure mobile services from other regions);
- Categorising and cataloguing – understanding the roles that each of the stakeholders might play in responding to the needs of the child victim and building a multi-stakeholder database;

Multi-agency collaboration through family justice centres in Belgium

Family justice centres are multi-agency collaborative endeavours that exist in a number of Member States, including Belgium. The concept of family justice centres starts from a holistic approach to violence in the family environment and the need to address any underlying issues for the benefit of all family members.

Family Justice Centres are based on a one-stop-shop approach, where the representatives of the police, prosecution, social services and other relevant professionals all work within the same building and have regular case management meetings, in which they involve relevant case workers and other experts as needed. There is a direct video link with the police station and the court if needed (prosecutors are already seated in the same building), ensuring immediate communication. The video link is enabled via specially developed technology, to enable any evidence thus collected to be admissible at court.

Following a successful launch of a few family justice centres, in 2022 the Government of Flanders decided to expand the network of centres and today they are available in all the Flemish regions.

- Building and maintaining communication and referral pathways can be achieved through memoranda of understanding, collaboration protocols, or

contractual arrangements. Such arrangements should ensure that different counterparts remain in regular contact with each other, regardless of any specific case, to ensure the flow of communication and good collaborative relationships between individuals.

It is important to note that for some professionals, it may be their first time encountering child victims with intellectual and psychosocial disabilities. Therefore, solutions should be sought through a multi-agency system with a broad mandate with the capacity to act in an intersectional manner (e.g. child or all crime victim support services, child protection services, etc.) that may be upgraded with the necessary expertise to respond to the needs of child victims with intellectual or psycho-social disabilities. One good baseline service for such an approach might be the Barnahus model:

Barnahus model is present in several Member States[42]. The model is created based on the Icelandic pioneering effort to build child-friendly houses (Barnahus in Icelandic) – which are developed as one-stop-shop service provision for children victims.

The Barnahus concept was developed with the goal to provide a "full-service house" for child victims of sexual abuse, by grouping law enforcement, child protection and healthcare (both physical and mental healthcare) professionals in a coordinated team that could support the child throughout the entire course of legal proceedings, with minimum secondary and repeat victimisation impact. The model was progressively replicated in other European countries as well, becoming an international normative standard in the works of the Council of Europe Lanzarote Committee.

In some Council of Europe countries, referral to Barnahus victim support is mandatory by law and Barnahus victim support experts (psychologists, healthcare professionals) must be allowed to participate in court proceedings, either to testify or to provide support to child victims (including child victims with disabilities). Although initially planned as a facility for child victims of sexual violence, Barnahus services can now cover a broad spectrum of child abuse and violence in many European countries[43].

[42] For more information about the Barnahus model, its presence across the EU and the services that are provided, see e.g. the Barnahus Network, *Child-friendly centres for abuse victims*, available at: https://www.barnahus.eu/en/

[43] Barnahus: a European journey, Council of Europe, 2023

In practice, the model requires that children are provided support services, as well as enabled to participate in criminal proceedings – by only coming to one location – the Barnahus premises. In this scenario – all experts or officials are coming to the child. This includes psychologists, medical professionals but also police, judges or prosecutors if needed. Often, the model is placed within the premises of a hospital, to facilitate access to more complex medical services, but this is not a strict requirement.

2.10 Preparing the child for court proceedings

Besides protection measures and procedural accommodations during both investigations and court proceedings as rooted in Articles 8 (right to access victim support services) and 22 (the individual assessment) of the VRD, a child with psychosocial and intellectual disabilities might have individual needs that should be recognised and accommodated from the moment of reporting[44]. A child who uses AAC needs to be able to use the vocabulary required to participate fully. In such cases, new symbols and vocabulary may need to be generated and introduced to the child (see section 6).

Criminal justice authorities shall ensure that the child victim has access to victim support services that are community-based, such as provided by civil society for free psychological and legal aid, during the transitionary phase between prosecution and indictment and adjudication. Following this transitionary period, which allows the victim to get familiar with the case and judicial expectations, the victim should have the possibility to benefit from court-based victim support services (for example, in Croatia, support for victims and witnesses of crime can be accessed in courts.[45]) and court accompaniment by an emotional support person.

Suppose the decision is taken not to prosecute the crime. In that case, the victim should have access to victim support services that can help challenge this decision

[44] Checklist for supporting child witnesses, Center for Justice Innovation, New York, 2023, available at https://www.innovatingjustice.org/sites/default/files/media/document/2023/Guide_CJI_CWMP_Checklist_SupportingChildWitnesses_05042023.pdf

[45] Victim Support Services in the EU: An overview and assessment of victims' rights in practice, Croatia, Fundamental Rights Agency, 2014, available at https://fra.europa.eu/sites/default/files/fra_uploads/country-study-victim-support-services-hr.pdf

and have it reviewed by a prosecutor in accordance with national laws of criminal procedure.

The criminal case file should be linked to the victim file as separate files for the use of different professionals at various stages of the proceedings, in accordance with the privacy by design principle advocated in the Model Provisions Paper of VSE.[46].

2.11 Implementation of Article 22 in comparative jurisdictions

In 2015, the French Ministry of Justice[47] developed guidelines for implementing Article 22. The guideline recognised several important elements, namely:

- Individual assessments must be conducted for all victims;
- There is a level of flexibility – regarding the level of detail, depending on the circumstances;
- Victims have the right to be accompanied by a person of their choice in the process of the assessment; however, in some circumstances, it needs to be checked for appropriateness as undue pressure might be applied (e.g. in cases of organised crime or violence in close relationships);
- Victims may wish not to benefit from individual protection measures;
- Assessments need to be done with victims' consent;

Results of the assessment do not necessarily need to be shared with the defence. However, they must constitute part of the case file and be transferred to further authorities during criminal proceedings.

Importantly, the assessment is expected to be conducted for all victims of criminal offences, with a level of flexibility depending on the severity of the crime and the seriousness of the consequences, as permitted by the VRD. For children with disabilities, the ability to give informed consent to each of these factors may require accommodations to be in place, as suggested in Part 2.

46 Model Provisions Paper, Victim Support Europe, 2023, p. 58, available at https://victim-support.eu/publications/victims-of-crime-model-provisions-paper-vses-vision-for-a-revised-victims-rights-directive/

47 In close co-operation with the French Victim Support and Mediation Institute (INAVEM, now France Victimes), the French National School for the Judiciary (ENM), the Crown Prosecution Service (United Kingdom), the Polish Ministry of Justice (Poland), the 'Secretaria General de la Administracion de Justicia' (Spain), the 'Associaçao Portuguesa de Apoio à Vitima' (Portugal), and 'GIP-JCI - Justice Coopération Internationale' (France)

Yet, 12 years after the adoption of the VRD, its provisions remain not sufficiently implemented in several Member States. Indeed, the European Commission initiated infringement proceedings against Bulgaria for failing to transpose the Directive. This failure has practical implications for victims in criminal proceedings. Therefore, the individual assessment is a matter for individual judges to embrace in the absence of a general rule requiring it to be conducted.

There is no clear guidance for professionals on how to conduct individual assessments. For some judges, the preparation of the assessment should be based on information provided by individuals who know the person, allowing them to extract information about their character and particularities. This information would guarantee the possibility of providing suitable conditions for participation in the legal process. However, the person with disabilities seems excluded from preparing the assessment.[48]. Equally, judges will understand that children with disabilities may require accommodations and additional support to participate in such assessments.

2.12 Setting procedural accommodations to respond to the needs of victims

The notion of procedural accommodations as a legal concept was introduced by Article 13 of the UN CRPD. It guarantees persons with disabilities an 'effective access to justice on an equal basis with others, including through the provisions of procedural and age-appropriate accommodations, to facilitate their effective role as direct and indirect participants, including as witnesses, in all legal proceedings.' In this context, it is important to note that unlike reasonable accommodations, which are qualified by the expectation of not imposing a disproportionate or undue burden[49], the UN Human Rights Council reaffirmed that procedural accommodations are a direct obligation and that the failure to provide necessary procedural accommodations constitutes a form of discrimination based on disability in connection with the right of access to justice[50]. The need for accommodations and the experience of the child with disabilities in school for examinations and lessons will

[48] From the Bulgarian national report
[49] UN CRPD, Article 2
[50] UN HRC, Equality and non-discrimination under article 5 of the Convention on the Rights of Persons with Disabilities Report of the Office of the United Nations High Commissioner for Human Rights, December 2016, UN Doc A/HRC/34/26, §37, available at: https://documents.un.org/doc/undoc/gen/g16/406/73/pdf/g1640673.pdf

provide useful indicators for aspects of procedural accommodations. Several of these considerations are addressed in Part 2, section 7.2.2.

2.13 Interplay between individual assessment and procedural accommodations

While the VRD does not discuss the notion of procedural accommodations in the context of child victims with disabilities, given that all EU Member States, as well as the EU itself, are parties to the UN CRPD, it can be reasonably argued that procedural accommodations must be accorded to all victims with disabilities, including child victims.

To ensure that such accommodations are discussed, determined and duly implemented, the individual assessment process must enable the identification of procedural accommodations.

Some procedural accommodations may (need to) be legislated. For example, suppose the criminal procedure requires in-person presence or repeated examination of a victim/witness in the court for a part of the proceedings. In that case, it will be necessary to ensure that such presence is not required for victims whose protection measures include avoiding exposure to the courtroom environment's stress.

The VRD lists several measures that may be seen as procedural accommodations, including:

- interviews with the victim being carried out on premises designed or adapted for that purpose;
- interviews with the victim being carried out by or through professionals trained for that purpose;
- all interviews with the victim being conducted by the same persons unless this is contrary to the good administration of justice;
- all interviews with victims of sexual violence, gender-based violence or violence in close relationships, unless conducted by a prosecutor or a judge, being conducted by a person of the same sex as the victim, if the victim so wishes, provided that the course of the criminal proceedings will not be prejudiced;

- measures to avoid visual contact between victims and offenders, including during the giving of evidence, by appropriate means, including the use of communication technology;
- measures to ensure that the victim may be heard in the courtroom without being present, in particular through the use of appropriate communication technology;
- measures to avoid unnecessary questioning concerning the victim's private life not related to the criminal offence;
- measures allowing a hearing to take place without the presence of the public[51];
- in criminal investigations, all interviews with the child victim may be audio-visually recorded, and such recorded interviews may be used as evidence in criminal proceedings;
- in criminal investigations and proceedings, in accordance with the role of victims in the relevant criminal justice system, competent authorities appoint a special representative for child victims where, according to national law, the holders of parental responsibility are precluded from representing the child victim as a result of a conflict of interest between them and the child victim, or where the child victim is unaccompanied or separated from the family; and
- where the child victim has the right to a lawyer, he or she has the right to legal advice and representation, in his or her own name, in proceedings where there is, or there could be, a conflict of interest between the child victim and the holders of parental responsibility[52].

This list only includes minimum requirements as prescribed by the VRD and needs to be read together with the UN CRPD and the CRC. The interplay between these different elements can be complex. Firstly, the individual assessment process (which encompasses, as noted above, the type of crime, circumstances of the crime and the circumstances of the victim) sets out an obligation to protect the victim from the risk of repeat victimisation, intimidation and retaliation, but most importantly also from secondary victimisation – which is a risk posed by the criminal justice system itself. Then, the individual assessment needs to result in the determination of necessary procedural accommodations. Such necessary accommodations must be

[51] Victims' Rights Directive, Article 23
[52] Victims' Rights Directive, Article 24

communicated to all the relevant actors in the proceedings, and compliance must be assured. The individual assessment needs to be maintained and updated throughout the criminal justice proceedings to ensure that it addresses the changing circumstances of the victim.

Ground rules hearing in the UK

Many criminal justice systems have a provision for some type of a preparatory hearing, where details on how the main hearing will be conducted are set out by the judge or other actors in the proceedings. In the British legal system – this is done through the ground rules hearings.

Ground rules hearings are convened in camera, between the judge, the prosecutor, the defence attorney and, when needed, relevant experts who can contribute to the determination of the course of the proceedings.

In cases of child victims with disabilities, experts who may be asked to contribute to the setting out of the ground rules might involve psychologists, pedagogues, speech therapists or any other expert who may contribute to the court's understanding of the needs of the victim (if they are being cross-examined at the court).

Depending on the recommendation of the expert, the judge may request the parties – the prosecutor and the defence attorney to adhere to a number of ground rules, such as: how to ask questions from the child, what type of questions would not be allowed etc.

When ground rules are agreed between the judge and the parties, their subsequent breech may result in finding the incompliant party in contempt of court and the determination of appropriate sanctions for such a behaviour.

2.14 Accessibility and procedural accommodations

The VRD requires Member States to ensure that victims with disabilities can benefit fully from all the rights it enshrines on an equal basis with others, including by facilitating access to premises where criminal proceedings are conducted and access to information.[53]. This might require providing information and advice in simple and accessible language.[54] . Member States must ensure that communications with victims are provided in simple and accessible language, both orally and in writing. Such communications shall take into account the victi"s characteristics, including any disability which may affect the ability to understand or to be understood.[55]

Similar to procedural accommodations, accessibility is an unqualified right. This means that the victim should not have to request accessibility in the criminal trial. Accessibility should be the default. Accessibility requires actions beyond wheelchair access or sign language interpretation. For child victims with intellectual and psycho-social disabilities, there is a fine (and potentially irrelevant line) between the accessibility of the environment in which justice takes place and procedural accommodations to facilitate their access to justice. Overall, access to justice is limited not due to legal obstacles, but rather the failure to put practical measures in place to ensure a better experience for children with disabilities in criminal proceedings. Many such accommodations can be found in Part 2 of this report.

Accessibility of criminal proceedings for child victims with disabilities may be outlined in terms of the requirements for adjustments related to the physical environment, the formal elements of a criminal trial, and all related communication and information. This would include, for instance, the physical accessibility of the room for a child and their assistant/supporter, including lifts that are large enough for a wheelchair or other mobility devices; the availability of court documents in a format that is adapted to the communication needs of the child (e.g. use of pictograms or easy-to-read language), including technical capacity for the child to use their AAC equipment. Such assistive technologies are summarised in Part 2, Sections 5 and 6.

[53] Victims' Rights Directive, Recital 15
[54] Victims' Rights Directive, Recital 21
[55] Victims' Rights Directive, Article 3§2

Child-friendly judgments may be considered beneficial for implementation in several Member States. In their case, judicial authorities try to ensure that judgments about a child (e.g. any custody-related decisions or – in the case of child victims, any judgment that relates to the crime committed against them) contain not only a fully reasoned and technical-legal version of the judgement as required by the national law and procedural practices but also a summary that addresses the child directly, in a language adapted to the child's personal communication needs, laying down the main points of the decision and the reasons for reaching it.

Procedural accommodations are measures taken to ensure the child's meaningful participation in the proceedings and to minimise or, ideally, eliminate any barriers to participation. This would include, for example, the involvement of relevant experts in the ground rules hearing, having concern for scheduling hearings at times that do not conflict with the child's therapy schedule, ensuring that experts that the child already has a rapport are included in the provision of support, rather than just any expert from the list (e.g. for legal aid the use of lawyers that the child might already have a trusting relationship with, or for psychological evaluations and support the engagement of experts that have already worked with the child previously etc.), allowing access to the justice facility for support dogs, working with the Barnahus model or ensuring other types of support, if the individual assessment so indicates.

Justice facility dogs (FYDO) have been trained and allowed to support vulnerable victims in a few Member States, including Italy, France and Belgium and indicate promising results especially for children with disabilities[56].

[56] Secondary Victimisation In The Justice System: Facility Dogs To The Rescue, Irish Judicial Studies Journal, p. 145-160, 2023

03

CONCLUSIONS AND RECOMMENDATIONS – PART 1

Individual needs assessments to understand risks and barriers are crucial to protect child victims in criminal proceedings and ensure their access to needed protection measures and accommodations. It is of great importance to establish a system in which this assessment can be completed fully in compliance with the VRD but also ensure safe access to justice for child victims with intellectual and psycho-social disabilities. The following key points have to be considered:

- Ensure that the individual assessment is conducted in a an accessible manner with trauma-informed approach for the child. At this point, an in-depth assessment is necessary.
- The in-depth assessment needs to be conducted in a non-intrusive manner, with the aid of a questionnaire or a similar tool that facilitates follow-on decision-making processes (potentially can be supported by an algorithm).
- A case officer should be identified as soon as possible after vulnerabilities/risks/barriers have been confirmed and put in charge of conducting the in-depth assessment.
- The case officer identifies professionals who will form a task force (TF). The TF will be responsible for identifying procedural accommodations based on the results of the needs assessment.
- A case management system must be built to ensure that all professionals involved can access the appropriate information.
- The individual needs assessment must be updated regularly and revised whenever the case progresses to the next stage of the criminal proceedings (e.g., from the police to the prosecutor, from the prosecutor to the court of first instance, etc.). The case officer is responsible for periodically checking in with the victim and their representative to inquire about changes in the victim's circumstances.
- Data is shared with professionals on an as-needed basis. The General Data Protection Regulation (GDPR) is applicable in line with the existing rules for the legal basis for data processing. To reduce the risk of secondary victimisation, the victim's consent will be sought only when necessary and if no other legal basis exists for processing their data.
- All professionals involved in the TF require access to the system and should be able to consult case details and contribute their expertise.

Part 2 of this document outlines the blueprint for implementing the digital information system to support these recommendations.

PART 2

Digital Information System for the Model Multidisciplinary Cooperation Systems

01

INTRODUCTION

The significant expansion of digital technologies over recent years has involved numerous domains throughout society, including justice sector. Technology, opening up new opportunities that were unthinkable only a few years ago, is now considered a potential facilitator of access to justice, particularly in terms of improving the efficiency of the judicial system. In this view, those responsible for administering justice systems in many parts of the world are progressively turning toward digitisation and technological solutions, often with the goals of improving the efficiency and accessibility of justice, reducing delay and, more generally, promoting confidence in the justice, since the use of new technologies (for example, internet), can offer the chance to open the judiciary to the public, thereby also increasing legitimacy. Consequently, courts, prosecutor's office and, in general, every office of the judicial system, whose traditional activities, practices and work organization were (and in many cases still are) based on paper (legal texts, case files, court registers etc.), are increasingly required to adopt new technologies and to change the way they operate. In this light, the use of information and communication technology (ICT) is considered one of the key elements to significantly improve traditional legal processes and to enhance efficiency, access, timeliness, transparency and accountability, helping the judiciaries to provide adequate services. For this reason, many national systems have innovated and adapted their regulations in order to allow the use and the exchange of electronic data and documents within national judicial systems: the availability of web services, the possibility of consulting on-line legislation and case law, the use of electronic filing, the electronic exchange of legal documents, are only some examples that are spurring the judicial administrations around the world to rethink their current functions and activities.

A growing diffusion has also concerned the use, in several social and working contexts, of Artificial Intelligence (AI). AI involves various technologies characterized by a machine mimicking "cognitive" functions associated with human mind, including "learning," "problem solving" and "natural language processing". The application of these technologies is now also found in the justice sector, where there is a growing utilization of AI algorithms for applications supporting justice professionals' everyday activities. However, the application of these technologies in a very delicate sector such as that of justice entails numerous opportunities but also risks that cannot be underestimated, mainly due to the influence that complex technologies capable of

imitating and replacing human abilities can have on contests in which they are applied. [57]

The application of information technology to the judicial context can be a means to support access to justice for crime victims, especially if they are in vulnerable conditions, such as children or persons with disabilities .

The aim of this document is to analyse and describe the various opportunities created by the application of AI and ICT technologies in judicial systems, including through the investigation of technological development conditions observed in the case studies selected for the Link project. Based on these argumentations, the document will propose the design of a multi-function and multi-role platform or case management system that can support, on the one hand, victims' access to legal information and justice and on the other hand, the activities of professionals in the sector, such as police, judges, and social services. Since the LINK project mainly deals with access to justice for children and victims with a disability, part of the analysis has focused on the most recent developments in assistive technologies (AT) and AAC (Augmentative and Alternative Communication) that support the inclusion of persons with disabilities , as well as on the application of this technology to the designed blueprint.

Based on the mentioned objectives, this report includes: a methodological section (Section 2) that describes the investigative method used; a section (Section 3) that describes the most recent developments in the field of e-justice, including a discussion on the application of AI technologies in the judicial field; subsequently, it includes a section (Section 4) that describes the technological development conditions in the countries selected for the case studies, based on the analysis by the LINK consortium partners during the drafting of the National Briefing Papers (NBP); the document also includes a section (Section 5) that provides an inventory of the most widely used or cutting-edge technologies in the field of Assistive Technologies (AT) and Augmentative and Alternative Communication (AAC); finally, the document includes a section that will describe the proposed platform to support crime victims and justice professionals (Section 6), preceded by an introductory section that provides guidelines for the implementation of ethical and data protection rules-compliant systems for victims' access to justice (Section 6.1).

[57] This aspect is explored in depth by Lupo, G. (2022), The ethics of Artificial Intelligence: An analysis of ethical frameworks disciplining AI in justice and other contexts of application. *ONATI SOCIO-LEGAL SERIES VOLUME 12*, ISSUE 3 (2022), 614-653.

02

METHODOLOGY

The methodology utilised for the analysis is mixed thus including desk research, quantitative and qualitative techniques of analysis. The desk research component of the study entailed a comprehensive review and analysis of national policy frameworks, including legislation, strategies, official reports, and statistical data, pertaining to the development and implementation of information and communication technologies (ICT) and artificial intelligence (AI) in both civil and criminal justice systems. This analysis was further enriched by incorporating findings from the National Briefing Papers (NBPs) produced by LINK project partners, with particular emphasis on sections addressing e-justice developments.

NBPs aimed to identify and analyse the systemic and practical barriers that children with disabilities face in accessing justice. Employing a multi-method approach that integrated legal analysis, semi-structured stakeholder interviews, and consultations with Children's Advisory Boards, the research sought to map the disconnect between legislative frameworks and the lived experiences of child victims with disabilities within justice systems. These combined data sources formed the empirical basis for the analysis presented in Section 4 and were instrumental not only in shaping the conceptual framework of the Model Multidisciplinary Cooperation System but also in guiding its adaptation to the specific national contexts.

Originally, the LINK project focused on six countries—Bulgaria, Czech Republic, Italy, Lithuania, Portugal, and Slovenia. However, with additional support from the International Foundation of Applied Disability Research (FIRAH), the scope of the research was expanded to include Hungary, thereby extending the applicability of the model to seven European contexts.

03

ICT IN JUSTICE: SOME INPUTS ON PROJECTS AND IMPLICATIONS

Multiple actors operate at the same time in the judicial system: some (judges, prosecutors, chancellery staff) carry out their functions within the judicial organization; others (lawyers, law enforcement and, in general, the community), equally essential, operate outside the borders of the judicial organization. This bipartition justifies the distinction, usual in the literature, between ICT developments inside and outside the courts.

With regard to the development of ICT within the courts, it is considered appropriate to resume the classification developed by that doctrine which distinguishes court technologies into four groups[58]: To address the issues identified in Part 1 it will be essential that each of these aspects is fully accessible for people with a disability and are interoperable with assistive technologies.

1. **Basic technologies**: such as computer, word processing, spreadsheets, and e-mail. It's important to note that these technologies constitute the basis on which the most innovative ones are developed.
2. **Applications used to support procedural activities**: this group include automated registers, basic automation and statistic functionalities and all those technologies that support the daily activities of the courts (for example, storage of documents, notifications and communications, filing of decisions, etc.).
3. **Technologies used to support the activities of the judges**: such as law and case law electronic libraries, and sentencing support systems. The use of these technologies is usually left to the free individual choice of the individual judge and affects not only the judicial organization but also the exercise of the jurisdiction. ICT supports the work of the judges in several areas: for example, organization of the activity, information management, document production and decision-making. One of the most important activities required to the judge, prior to the decision, is legal research, today considerably facilitated by the use of new technologies. Some European level examples of legal research tools are the following:
    - EUR-Lex: is the European Union's legal database and contains EU case law in all EU official languages;

[58] This distribution is proposed by Velicogna, Marco. and Bogdani, Mirela. 2009. "Use of Information and Communication Technologies (ICT) in European Judicial Systems". Accessed in: https://rm.coe.int/sep- 2017-use-of-information-and-communication-tecnoligies-ict-in-judic/16809ebf0a

- JURIFAST: a database created by the Association of the Councils of State and Supreme Administrative Jurisdictions of the European Union (ACA Europe), which contains preliminary rulings by the European Court of Justice, and the relevant preliminary questions by the Member States' courts (this database is available in English and French).
- JURE: a database created by the European Commission that contains case law on jurisdiction in civil and commercial matters and on the recognition and enforcement of judgments in a State other than the one where the judgment was passed. This includes case law on relevant international conventions (i.e. 1968 Brussels Convention, 1988 Lugano Convention) as well as EU and Member State case law.

At national level, it is worth mentioning the following databases:

- Ireland: Case law for the Supreme Court, the Court of Criminal Appeal and the High Court is also available for free on the BAILII (British and Irish Legal Information Institute) database and the IRLII (Irish Legal Information Initiative) database;
- Netherlands: Since 9 December 1999, the case-law of district courts, courts of appeal, the Supreme Court of the Netherlands, the Administrative Jurisdiction Division of the Council of State, the Central Appeals Tribunal and the Trade and Industry Appeals Tribunal has been published online. Judgments can be searched in the case-law database at rechtspraak.nl by text, case number, date of judgment or publication, judicial authority, (sub-)jurisdiction, ECLI or publication reference.
- Denmark: *Domsdatabasen* is a database containing selected judgments of the Danish courts. It is being populated gradually, starting in 2022. The database contains civil rulings, along with a small selection of judgments in criminal cases of particular public interest. The database can be used free of charge. [59]
- Austria: Judgments made by Austrian courts are published in the legal information system of the Republic of Austria and can be found at http://www.ris.bka.gv.at/. Judgments by the highest courts and the administrative courts are published in full; those of the other courts are published only in some individual cases. The legal

[59] It can be found at: https://domsdatabasen.dk/

information system (*Rechtsinformationssystem – RIS*) is an electronic database operated by the Austrian Federal Chancellery. Its main purpose is to announce legislation published in the Austrian federal law gazette (and provide information about the law in the Federal Republic of Austria.

- Portugal: The Ministry manages a number of data bases of legal documents that can be found at http://www.dgsi.pt/. They are also published in the Official Gazette and available at https://dre.pt/: decisions and pronouncements of the Constitutional Court on the unconstitutionality or illegality of a law or on the unconstitutionality of an omission; decisions of the Supreme Court of Justice and the Court of Auditors to harmonise case-law and the decisions of the Supreme Administrative Court that by law are generally binding; decisions of other courts that are generally binding.

4. **Electronic case allocation and management system**: these technologies combine judicial, procedural and administrative activities with the need of organizational coordination. The case management system (CMS) is an evolution of the automated registers because this system is not limited to providing a digitization of document and processes, but it also introduces functionalities to help the management of the cases: allocation of cases, templates for documents preparation, electronic filing of legal documents, access to case information, statistic. The opening of the CMS to external actors in the system, such as lawyers, is the foundation of e-filing systems that allow the electronic submission of documents in courts and have the potential to digitalise the entire document flow among the various parties involved in the procedures (court registry, judge, lawyer, etc.).

At a national level, it is possible to report the following examples of case management system (and connected e-filing systems):

- Italy: in Italy, civil and criminal trials are now online. The core of civil trial online (so called “PCT”) is the Case Management Systems (CMS), which receive the deposits of internal and external authorised subjects, manage the communications/notifications of the registry and constitute the documentary repository for each electronic file of each procedure. The registries are called SICID (for civil, labour and voluntary jurisdiction trials) and SIECIC (for securities and real estate enforcement, pre-bankruptcy and bankruptcy trials). The case

management system in use in the criminal judicial offices is called SICP. The system allows to manage all stages of the proceedings and of the trial at all the different levels of the judgment up until the Court of Appeal. SICP also includes an advanced system for automatic assignment of files upon registration with the Prosecutor's Office.

- Portugal: Citius is the system developed by the Portuguese Ministry of Justice to dematerialise proceedings by electronically treating all information belonging to the proceedings, thus reducing their physical form to a minimum. As a rule, all legal proceedings, that is, main actions, precautionary measures, ancillary proceedings, individual judicial notifications and any other proceedings, whether joined or autonomous, including appeals, **are now electronic and processed on *Citius.*** [60]

- Lithuania: the Lithuanian court e-services portal is called "e.teimas.it". The portal allows to: view information about the cases; listen to audio recordings of court hearings; prepare and deliver procedural documents to the court; fill in the documents according to the provided forms; receive notices regarding the admission of documents, errors detected, hearings of the case. [61]

The exchange of procedural data and related information takes place not only within the judicial organization but also externally and, above all, between the courts and the network of subjects who come into contact with them. All European countries have now equipped themselves to guarantee the transmission of judicial information electronically and, in most cases, via the internet. Electronic information provision systems are based on four fundamental elements:

1. Organisation of the web service provision: it varies widely across Europe. In some cases, web information organization and provision are centralized, with the highest courts, ministries of justice, and judicial councils playing a prominent role; in other cases, information provision is delegated within

[60] More information about the platform can be found at the following link: https://www.citius.mj.pt/portal/default.aspx

[61] For more information: https://e.teismas.lt/en/public/home/

common frameworks; in some few cases, complete freedom and local initiatives are the rule.

2. Access to information: the European landscape is quite heterogeneous also from this point of view. In some cases (for example, in Austria), information about the courts is made available only through the official website of the Ministry of Justice; in other countries (such as Belgium and France), each court can develop its own website, following the guidelines established by the Ministry of Justice; in some other countries (e.g. Italy), courts can create their own website without following any specific rule.

3. Users: information for users include parties, lawyers, experts, other frequent users (for example, witnesses) and, in general, the community that may have an interest in having access to some procedural data (for example, the citizen may want to know the date of a public hearing to attend). Each user, obviously, has their own information needs, technological skills and legal knowledge. Consequently, the use of specific formulations, abbreviations and technical languages, while on the one hand facilitates the exchange of information between the judicial organization and users who understand the formulas used, on the other hand creates a barrier in accessing information to those subjects who do not have the appropriate technical-legal skills to access it.

4. Content: information provided by judicial website can be divided into four groups with respect to their content:

    - General information: proved details on addresses, opening hours, e-mail addresses of offices, court administrative personnel and, more rarely, judges.

    - Information on court activities and organization: include data on statistics of the courts' productivity, different divisions, organization of the work, and publication of the judgements;

    - Legal information: concerns rules, procedures, practices, examples of forms or pleadings for the guidance of litigants, etc.

    - Case information: provides information contained in docket reports, case files, indexes and other court documents. This information is

provided in compliance with national regulations (especially those on privacy).

As already mentioned, in order to improve and enhance access to justice, judicial administrations across Europe have examined the feasibility of providing court services electronically. The introduction and implementation of e-justice systems are developed along the simplification of existing procedures and the introduction of new entirely online procedures. For reasons of clarify, it is considered appropriate to distinguish between civil e-justice and criminal e-justice.

3.1 Civil e-Justice

In recent years, European institutions encouraged the use of telematic tools in the administration of civil justice, in order to reduce the slowness of judicial processes and support citizens' access to procedural information in electronic form. The process of digitalisation of civil justice was then accelerated by the covid-19 pandemic emergency, which increased the need to adopt technological systems to guarantee the continuity of judicial activities despite the restrictions imposed by the health emergency.

The brief analysis presented here, despite the focus of LINK project is on the crime victim (thus involved in a criminal proceeding), is justified by the fact that in some countries, such as Italy, support for the victim also involves the civil procedure. This is because in some national contexts, compensation procedures and those that lead to a change in family status are handled by the civil judge.

Here some examples of civil e-justice projects developed at the European level:

1. European e-Justice Portal: The European e-Justice portal helps individuals, companies, lawyers and judges to find answers to legal questions. The site offers over 30,000 pages of content, information and links on laws and practices in all EU countries. Information is available on law, case-law, judicial systems, legal professions and judicial networks, the European Judicial Network in civil and commercial matters, cross-border proceedings, legal aid, mediation in the EU and Member States, succession, rights of victims of crime, the rights of defendants in criminal proceedings, the tools available to judges and legal professionals, business, bankruptcy and real estate registers in the EU and Member States. It also provides information on how to find a lawyer,

notary, translator or legal interpreter or mediator, and on European judicial training. Finally, it includes the Glossary and legal terminology, with dynamic online modules of civil and commercial legislation, The European Judicial Atlas in civil matters and access to justice for environmental issues. The European justice portal is intended to become an electronic one-stop shop in the field of justice and, at this stage, it aims to make life easier for citizens, providing information on judicial systems and improving access to justice across the EU. The central part of the homepage is divided into four sections dedicated to specific stakeholders: citizens, companies, legal professionals and judges, each with dedicated menus for research. The final part of the page is reserved for news. The Portal, run by the European Commission's Justice and Consumers DG, is being developed in collaboration with the European Judicial Network in civil and commercial matters, the European Judicial Network in criminal matters, the Council of European Forensic Associations and the Notaries' Council of the European Union (CNUE).

2. **E-Codex**: The e-CODEX system operates at European level: it is a computerised system for the cross-border electronic exchange of data in the area of judicial cooperation in civil and criminal matters. [62] The e-CODEX system is composed of: an e-CODEX access point, consisting of an interoperable gateway, which allows the secure exchange of information over a telecommunications network with other gateways to be carried out; a connector to link connected IT systems to the gateway for the purpose of exchanging data with other such IT systems; digital procedural standards; the supporting software products, documentation and other assets listed in the annex to the regulation. [63]

3. **Online Dispute Resolution (ODR)**: The European Online Dispute Resolution (ODR) platform is provided by the European Commission to make online shopping safer and fairer through access to quality dispute resolution tools. All online retailers and traders in EU, Iceland, Liechtenstein or Norway are obliged to provide an easily accessible link to the ODR platform and an e-mail

[62] For further information, see: e-CODEX (European Commission), e-CODEX EU.
[63] More information is available at the following link: https://eur-lex.europa.eu/IT/legal-content/summary/e-codex-computerised-system-for-the-cross-border-electronic-exchange-of-data-in-the-area-of-judicial-cooperation-in-civil-and-criminal-matters.html

address for the ODR platform to contact you (Article 14 of the Regulation (EU) No 524/2013). If the retailer or trader has received a notification from the ODR platform, it means a consumer has an unresolved problem with a good or service purchased from his/her online store and chose to use the ODR platform to find a solution. If the notification concerns a complaint, this means the consumer would like to refer the problem to an approved dispute resolution body. The dispute resolution bodies listed on the ODR platform meet strict standards of quality and independence. A dispute resolution body is a neutral third party that helps consumers and traders solve disputes in a non-confrontational way. They are usually less expensive and quicker than going to court.

4. Finally, it is important to mention the **LEILA project** (Towards a multilingual European platform for judicial Auctions), which aims to give citizens and companies easy access, without intermediaries, to information on goods to be sold in judicial auctions taking place in several member states. It develops a "one-stop-shop" EU marketplace with a simple and intuitive user interface, extending national boundaries and enabling users to compare search results in different languages. [64]

3.2 Criminal e-Justice

Digitalisation profoundly affected also the criminal justice field, acting as both a catalyst of cross-border criminal activity and an effective tool to fight organised crime. In recent years, the European Union has taken steps to modernise the information systems used by law enforcement officials in the respective Member States, to better enable cross-border cooperation in criminal cases. In particular, EU law enforcement authorities, including Europol, eu-LISA and Frontex, are equipped with state-of-the-art digital (ICT) tools for gathering and sharing information, and can exchange and process operational data in a structured, encrypted, fully automated and interoperable way. In contrast, judicial practitioners in the Member States, often lack appropriate tools to tackle serious cross-border crime and enhance cooperation among involved authorities. In particular, the lack of a structured and integrated information system to support operational exchanges of crucial information and evidence during cases requires practitioners to find workarounds based on

[64] To learn more about the project's objectives, please visit: https://www.igsg.cnr.it/progetti-2/leila/

cumbersome manual procedures. At European level, a fundamental role in this sense is played by the European Union Agency for Criminal Justice Cooperation (Eurojust).[65] In December 2018, Eurojust presented a note to the Council of the European Union outlining the need for a standardised set of digital tools to support efficient interaction and judicial cooperation within the European Union. These tools would incorporate the latest information technologies within a reliable and secure centralised IT infrastructure, known as Digital Criminal Justice (DCJ). In July 2019, the European Commission's Directorate-General for Justice and Consumers, with the support of Eurojust and other stakeholders, initiated a study to further discuss, develop and implement the Digital Criminal Justice concept. Specifically, the study seeks to better understand the business needs of the judicial community working on cross-border criminal cases, and assess how these needs could be met by the proposed technological solutions. The study has the following objectives:

1. analysing the current policy landscape within the Member States and at EU level, including potential obstacles presented to Digital Criminal Justice presented by these frameworks;
2. undertaking a high-level assessment of the business needs of judicial practitioners working on investigations in cross-border criminal cases, in particular with respect to data exchange and processing, as well as a gap analysis of the business needs against the existing solutions and those proposed under the Digital Criminal Justice study;
3. identifying and examining in detail the most promising technical solutions for meeting the identified business needs based on emerging trends in the field of communication and information technology, and how these technologies could be leveraged to address the identified business needs;
4. preparing final recommendations on Digital Criminal justice, including guidance on appropriate technical solutions.

The final report on Digital Crime Justice includes an in-depth assessment of the most promising possible solutions including a cost estimation and appropriate recommendations, as well as a governance structure and an implementation roadmap.

[65] Eurojust's official website can be accessed at: https://www.eurojust.europa.eu

Because today, most of the time, criminal activities are no longer just local or national, evidence and qualified criminal and investigative information no longer appear in their traditional form: they are mostly electronically stored on a mobile phone or another electronic device. Taking these developments into account the European Union needs to develop better means to exchange information and evidence relating to crimes in a swift and secure manner in order to combat crimes in cross-border dimensions, to achieve a common European area of justice and to ensure cross-border cooperation between Member States and/or with third countries in the field of criminal investigations. In this view, the e-Codex system is also applicable in criminal justice, allowing the secure cross-border exchange of sensitive data through the following procedures:

1. **European Investigation Order (EIO)**: it is a judicial decision issued in or validated by the judicial authority in one EU Member State ("the issuing State") to have investigative measures to gather or use evidence in criminal matters carried out in another EU country ("the executing State"). It is valid throughout the EU, but does not apply in Denmark and Ireland. The EIO is based on mutual recognition, which means that the executing authority is, in principle, obliged to recognise and ensure execution of the request of the other country. The EIO was established by Directive 2014/41/EU of the European Parliament and of the Council of 3 April 2014 regarding the European Investigation Order in criminal matters.

2. **Mutual Legal Assistance (MLA)**: it consists of "cooperation between different countries for the purpose of gathering and exchanging information, and requesting and providing assistance in obtaining evidence located in one country to assist in criminal investigations or proceedings in another". In other words, mutual legal assistance procedures have been designed specifically for gathering and exchanging evidences; however, in criminal matters there are no universal instruments governing this cooperation (in the sense that there is no obligation for States which might enforce the mandatory use of certain MLA tools, but, at the EU level, there is the Convention on Mutual Assistance in Criminal Matters between the EU countries).

3. **European Arrest Warrant (EAW)**: it is a simplified cross-border judicial surrender procedure for the purpose of prosecution or executing a custodial sentence or detention order. The Framework Decision on EAW has been in

force since 1 January 2004 in all Member States. It has replaced the lengthy extradition procedures that used to exist between EU Member States. The aim of the EAW is to ensure that open borders and free movement in the Union are not exploited by those seeking to evade justice. The mechanism is based on the principle of mutual recognition and therefore operates via direct contacts between judicial authorities. An EAW may be issued by a national judicial authority for: a) prosecuting a person when the offence for which the person is being prosecuted is punishable by the law of the issuing Member State by a custodial sentence or a detention order for a maximum period of at least 12 months; b) the execution of a custodial sentence or detention order when the sentence passed is of at least 4 months.

Finally, deserve attention the Pro-Codex project (Connecting Legal Practitioners National Application with e-CODEX Infrastructure), which aims to create conditions for supporting the development of the technological components needed to make e-CODEX interoperable for cross-border communication in the judicial field and applications used by legal professions (and in particular lawyers and notaries) at national level. The project aims to develop working pilot cases in a limited number of countries to facilitate the use of e-CODEX infrastructure and increase the number of users belonging to different categories of legal operators. [66]

3.3 AI in Justice: risks and opportunities

Despite its expanding presence across many aspects of our lives, there is no widely accepted definition of “artificial intelligence”. [67] Instead, it is an umbrella term that

[66] For more information on the project: https://www.cnr.it/en/research-projects/project/21504/pro-codex-connecting-legal-practitioners-national-application-with-e-codex-infrastructure-dus-ad008-051

[67] There is a legal definition adopted by broad consensus, in the Council of Europe Framework Convention on AI, Human Rights, Democracy and Rule of Law, which has recently been opened for signing. The EU is one of its signatories, as a standalone entity. For the purposes of this Convention, “artificial intelligence system” means a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations or decisions that may influence physical or virtual environments. Different artificial intelligence systems vary in their levels of autonomy and adaptiveness after deployment.
Artificial intelligence is also defined in the recently adopted EU AI Act:
Article 3 – Definitions:
For the purpose of this Regulation, the following definitions apply:

includes a variety of computational techniques and associated processes dedicated to improve the ability of machines to do things requiring intelligence, such as pattern recognition, computer vision, and language processing. AI discipline is a complex subject which involves very different aspects and therefore needs a broad focus on all contexts of application: although AI technologies are now applied in very heterogeneous sectors (for example, finance, healthcare, education, human resources, etc.), we will focus our attention on the consequences deriving - in terms of risks and opportunities - from the application of these technologies in the justice sector and, in particular, criminal justice.

3.3.1. Predictive policing and risk assessment with the use of AI

A particularly thriving area for exploiting the potential of algorithms in criminal justice is that of risk assessments, i.e. the prognostic evaluation of a defendant's risk of recidivism and his/her social danger: the latest generation risk assessment tools are made up of algorithmic machine learning systems, characterized by software programmed to perform certain tasks and which updates their codes as they "learn" from the observed results; since they have "self-learning capabilities", they are part of AI systems, which "learn from experience" and are susceptible to evolution even independently of human supervision. Risk assessment tools can be used to:

1. evaluate the possible existence of conditions to maintain preventive detention when foreseen (pre-trial risk assessment tools - PRAI);
2. evaluate the risk of recidivism or the admissibility of alternative measures to detention (risk assessment tools-RAI).

The reasons why judicial systems would equip themselves with these algorithmic risk assessment systems lie in the greater reliability and impartiality that these would guarantee in the assessment of criminal dangerousness, ensuring decisions free from those cognitive errors that could instead characterize the decision of the judge in person.

Nonetheless, these systems could also lead to errors as they, based on statistical calculations referring to a plurality of people sharing the same characteristics and

(1) ‘artificial intelligence system’ (AI system) means software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with.

grouped within "risk classes", also take into consideration elements that do not concern the individual person, thus being influenced by variable factors (e.g., ethnicity and socioeconomic status).

Not being based on the specific dangerousness of the individual person undergoing the assessment, the risk assessment tool can generate distorted views. Since the accuracy of the assessment is compromised by the absence of individualization of the assessment itself, frequent "calculation errors" may occur: in particular, the output could indicate a "false positive" (classifying a person among the “high risk” subjects “of committing a crime, even though it is not one) or a “false negative”, erroneously classifying a potentially recidivist person as low risk.[68] For instance, as described in Part 1, many persons with disabilities have experienced discrimination. The impact of this discrimination may be conflated with the behaviour of other groups, where the cause of the behaviour is quite different.

Furthermore, the confidentiality that characterizes the rules on the functioning of risk assessment tools prevents the accused from accessing the information on which the assessment was based: this entails a violation of due process (based, among others, on the principle according to which may preclude the accused from accessing the information on which a given prediction or decision was based) precluding a verification of any distorted inputs that may have resulted in a significant overestimation of the risk. The secrecy of the operating and processing methods of the datasets, as covered by the protection of industrial secrecy, therefore precludes the exercise of the right of defense.

In conclusion, the risk assessment tools – which are used to inform decisions about pretrial detention, sentencing, and parole – can have a significant positive impact on the rights of individuals accused and convicted of crimes, to the extent that they are fair and accurate. The corollary, however, is that flaws or unknown limitations in the operation of such systems can have deleterious effects on a wide range of rights.

[68] For example, the single most widely-used algorithmic risk assessment system in the United States has been accused of perpetuating racial bias. An investigation by ProPublica found that COMPAS, a proprietary risk-assessment system that certain U.S. state courts use in making bail and sentencing decisions, misclassified African-American offenders as “high-risk” at twice the rate of Caucasians, even though the system had nearly the same accuracy rate (63% vs. 59%) in predicting when individuals from both racial groups would reoffend. More information is available at: https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm

3.3.1.1. AI to assess victims of domestic violence at risk.

Technology is playing an increasingly important role in supporting victims of domestic abuse today. The importance of technological solutions has increased significantly during the COVID-19 pandemic emergency and during the various national blocks that followed. In this context, technological solutions that can adapt and enable survivors to be supported in their own environments have become even more vital than before. This has resulted in a massive use of technologies to support victims - especially women, children and persons with disabilities - of domestic abuse in several countries. [69]

The following technological solutions, adopted in several European and non-European countries, should be mentioned:

1. **United Kingdom**: Refuge, a United Kingdom charity providing specialist support for women and children experiencing domestic abuse, provided a rule based chatbot on their websites to help victims of online abuse. [70]

2. **Australia**: In Australia, a chatbot application, HelloCass14, was developed to provide information on domestic and family violence, sexual harassment and sexual assault. [71]

3. **Spain**: In Spain, since 2007, the police administration has implemented a system called Viogén (Integral Monitoring System in Cases of Gender Violence) for monitoring and preventing gender-based violence (details of intersectionality for girls with disabilities are discussed in Part 1). The system is used when a complaint of ill-treatment, abuse or threats is lodged and provides for regular updates of information on the case to track its progress. The complainant is invited to answer a series of questions, the results of which are cross-checked with various security databases. The questions concern the aggressor's conduct, his emotional characteristics, the type and frequency of any previous attacks, aspects of possible physical or socio-economic vulnerability of the victim. The answers are then screened by an algorithm that

[69] The theme was further developd, in the territorial context of Unikted Kingdom, by Saglam, R. B., Nurse, J. R. C. and Sugiura, L. 2009. "Designing Chatbots to Support Victims and Survivors of Domestic Abuse". Accessed in: https://arxiv.org/pdf/2402.17393

[70] Refuge. 2019. Refuge: For Women and Children against domestic violence. https://www.nationaldahelpline.org.uk/

[71] For more information: https://hellocass.com.au/

assigns a risk-weighted score, which can be manually modified by the police officer. The score considers variables that estimate the severity of risk in light of the results of specific scientific studies dedicated to understanding gender-based violence. Each risk profile is then associated with a set of monitoring and prevention measures of increasing intensity, in order to identify the most appropriate for the specific case: in cases deemed to be more serious, forms of tracking of the movements of the aggressor are activated and frequent checks at the places where the victim usually goes. The Viogén system allows not only to process the answers provided by the victim, but also to integrate a plurality of information from various archives, in order to build a profile of criminal risk of the aggressor as complete as possible. Its accessibility is also widespread in Spain. This provides an increasing amount of information for effective preventive measures. There are conflicting views on the proper functioning of this system: A 2014 article in newspaper El Mundo revealed that, in 14 out of 15 femicide cases, the Viogén algorithm had assigned a low risk profile to the alleged aggressor, resulting in the failure to activate stringent monitoring measures, with obviously dramatic results. By contrast, a 2018 study by several Spanish researchers showed that the system has high statistical reliability, almost equivalent to that of cancer screening tests. This reliability has been improved over the years by refining the variables used within the system to estimate risk and allow for more accurate monitoring. However, the system has its limitations: in addition to a lot of data accessible to more than thirty thousand users, with considerable risks for privacy in the light of the impossible anonymization, the Viogén system is based on a fundamental human act, the intention and ability of the victim to report the violence suffered and to contact the police in time. Its own empowerment inherently requires the knowledge and evaluation of a considerable number of cases to evolve towards a better understanding of future threats; at the same time, the “machine” interacts with man, and its output can only be a guideline, which must be accompanied by the irreplaceable understanding of the actual reality on the part of those who can offer concrete help. [72]

[72] To learn more about this system: https://eucpn.org/document/viogen

3.3.2 The use of AI in the individual assessment, as well as throughout the criminal proceedings

The integration of AI into criminal justice began with the development of basic data analysis tools that assisted law enforcement agencies in identifying crime patterns. Over time, advancements in machine learning, natural language processing, and big data analytics have led to more sophisticated applications. Today, AI is utilized in various aspects of criminal justice, including:

Predictive Policing: predictive policing involves the use of AI algorithms to analyze historical crime data and predict future incidents. These algorithms can identify hotspots for criminal activity, allowing law enforcement agencies to allocate resources more effectively. This use of AI has both benefits and criticisms. The benefits include: a) resource optimization (Enables efficient deployment of police forces); b) crime prevention (helps in preventing crimes by increasing police presence in predicted hot-spots); c) data-driven decisions (reduces reliance on subjective judgment, promoting objective decision-making). Critical issues may include: a) bias in data (AI systems can perpetuate existing biases present in historical crime data, leading to disproportionate targeting of certain communities); b) privacy concerns (increased surveillance and data collection can infringe on individual privacy rights); c) reliability issues (predictions are not foolproof and can lead to false positives). [73]

- Facial Recognition regards the identification of suspects and missing persons through advanced image processing techniques. Video and image analysis is used in the criminal justice and law enforcement communities to obtain information regarding people, objects, and actions to support criminal investigations. However, the analysis of video and image information is very labor-intensive, requiring a significant investment in personnel with subject matter expertise. Video and image analysis is also prone to human error due to the sheer volume of information, the fast pace of changing technologies such as smartphones and operating systems, and a limited number of specialized personnel with the knowledge to process such information. AI technologies provide the capacity to overcome such human errors and to

[73] To learn more about the topic, we recommend reading the paper “Artificial intelligence and predictive policing: risks and challenges” published by the European Crime Prevention Network (EUCPN) and available at: https://eucpn.org/sites/default/files/document/files/PP%20%282%29.pdf

function as experts. Traditional software algorithms that assist humans are limited to predetermined features such as eye shape, eye color, and distance between eyes for facial recognition or demographics information for pattern analysis. AI video and image algorithms not only learn complex tasks but also develop and determine their own independent complex facial recognition features/ parameters to accomplish these tasks, beyond what humans may consider. These algorithms have the potential to match faces, identify weapons and other objects, and detect complex events such as accidents and crimes (in progress or after the fact). [74]

- Risk Assessment Tools: Evaluating the likelihood of re-offending to inform bail and sentencing decisions (this topic has been examined more in depth in the section 3.3.1 Predictive policing and risk assessment with the use of AI).
- Automated Case Management: AI-driven case management systems automate various administrative tasks, such as scheduling, document management, and workflow coordination. These systems bring benefits and implementation challenges. The main benefits are: a) time savings (reduces the administrative burden on legal professionals); b) accuracy (minimizes human errors in document handling and case tracking); c) accessibility (improves access to case information for all stakeholders). The main implementation challenges are: a) integration with existing systems (ensuring compatibility with legacy systems can be complex); b) user training (requires training for legal professionals to effectively use new technologies); c) data security (protecting sensitive legal information from cyber threats is paramount).
- Chatbot: Chatbots are computer programs that hold online “chats” or conversation via text or through a website. Chatbots simulate conversations that a user would typically have with a human representative from a company or agency. They range in sophistication from rudimentary programs that answer a simple query with a single-line response to digital assistants that leverage AI and machine learning (ML) to learn over time and deliver increasing levels of personalization as they gather and process information.

[74] This theme is analysed by Tigano, C. (2019), Using artificial intelligence to address criminal justice needs. *NIJ JOURNAL, ISSUE No. 280,* (January 2019), accessible at: https://www.ojp.gov/pdffiles1/nij/252038.pdf

Although chatbots are often used in the customer service industry (to automate repetitive tasks, respond to frequently asked questions - FAQs - or collect information from individuals), their potential benefits extend also to the criminal justice system. Chatbots have the potential to improve efficiency, redefine engagement, reduce administrative costs, and—possibly—expand access to information related to justice system processes. In the community, chatbots have also been used to support victims of crime through identifying sources of support and helping victims document instances of crime to aid future reporting or legal options. In this regard, it is appropriate to highlight the project "Sophia Chatbot". Sophia is a digital companion that anonymously assists survivors of domestic violence. The app is available 24/7, accessible in every country, and is currently offered in 12 languages. Assisting more than 12,000 users in over 20 countries since its December 2021 launch, Sophia is the first chatbot of its kind, allowing survivors to gather potential evidence and seek help safely and securely without leaving a digital trace. The app includes an untraceable function that allows users to store potential evidence, accessible through a steganographic image password to ensure survivor safety. The chatbot has also been tested by domestic violence experts and survivors to ensure that it meets their needs. The app is also continuously adapted to provide more support, including the addition of a video chat option for users with low literacy. [75]

- **Protecting Vulnerable Persons and Reducing Demand of Police Time and Resources using Assistive Technology**: the project, which was funded by Police Innovation Fund 2016/2017, aimed to use assistive technology to improve safeguarding provision in the management and reduction of repeat vulnerability 'missing persons' incidents. The project took place in West Yorkshire and Hertfordshire Police Forces during 2016-2017.[76]

- **Application of AI for early recognition of criminal offences that relate to hate crime**: in this research project, the use of AI to detect, prevent and prosecute hate crime in police organisations is being investigated within a holistic framework. The aim of the project is to produce a number of reports that

[75] More information is available at: https://innovationinpolitics.eu/showroom/project/sophia-chatbot/
[76] For more information:
https://pure.port.ac.uk/ws/portalfiles/portal/7508198/Evaluation_report_2.5.17.pdf

outline the necessary conditions to enable the police to adopt AI to counter hate crime, and investigate the necessary technical approach and potential solutions. The project, which was developed between 2020 and 2023, involves several partners, including Police Presidium Munich, State Criminal Police Berlin, Technical University of Berlin and Ruhr University Bochum. [77]

- **IustitIA**: in Italy, the Court of Appeal of Reggio Calabria started the "IustitIA" Project, in partnership with the Mediterranean University and the Dante Alighieri University for Foreigners, both from Reggio Calabria, with the main objectives of reducing litigation and processing times. The IustitIA Project, through the use of new technologies, and, in particular, Artificial Intelligence, aims to raise the level of performance of the judicial system, also focusing on training and research. This may have a positive effect for access to justice of victims. [78]

- **Artificial intelligence tools for the service of citizens**: The project, which involves the government of Spain and the Ministry of the Presidency, justice and relations with the court has as its main objective to improve the provision of services to citizens, businesses and professionals in the judicial sector as well as to the staff of the Administration of Justice itself. [79]

- **Victims**: in Italy, the IGSG (Instituto of Legal Informatics and Judicial Systems) and the Ministry of Justice signed on 30 July 2021 a three-year agreement on the analysis and promotion of the protection of the rights of victims of crime. The convention has, among its specific objectives, the analysis of the organisational conditions characterising access to justice for victims of crime and more generally the whole chain of relevant services, providing guidance on how to address the issues involved with a view to contributing to the definition of new organisational and technological tools necessary to foster better interaction between victims and the justice system and more effective

[77] For more information: https://fra.europa.eu/it/promising-practices/application-ai-early-recognition-criminal-offences-relate-hate-crime
[78] For more information: https://www.iustit-ia.it
[79] For more information: https://socinfodigital.es/wp-content/uploads/2024/04/20240401-Herramientas-de-IA-al-Servicio-de-la-Ciudadania_SOCINFO_Ministerio-de-Justicia.pdf

synergies between services support for the victim, the development of an integrated network. [80]

3.3.3 Ethical concerns and the limitations to using AI in terms of victim support

The recent introduction of AI tools in the field of justice has several ethical implications, such as risks to judicial independence and procedural transparency and discriminatory bias. Starting from this last aspect, the use of AI may bring to discriminatory outcomes, thus perpetrating discrimination against people, or groups of people, based on gender, race, culture, religion, age or ethnicity: this happens because the most common way to deploy these systems is to "train" them to replicate the outcomes achieved by human decision-makers. This obviously conflicts with the non-discrimination principle, a fundamental value in liberal democratic countries that is often highlighted by international organizations such as the Council of Europe and United Nations (UN). Therefore, with the implementation of AI technology based on the use of large amounts of data, such as machine learning – utilized for supporting critical decision-making affecting citizens – the risks of perpetuating discriminations are severe. In particular, AI decision-making may reflect discrimination bias affecting the dataset utilized that may subsequently incorporate intentional or unintentional systemic human biases. This problem takes on greater gravity if we think about the "veneer of objectivity" that is created around high-tech systems in general and that can obscure the fact that these can produce results that are sometimes even worse than purely human ones. Moreover, AI systems depend on the generation, collection, storage, analysis, and use of vast quantities of data—with corresponding impacts on the right to privacy. AI techniques can be used to discover some of our most intimate secrets by drawing profound correlations out of seemingly innocuous bits of data. In addition, AI systems utilised by judges, public prosecutors, police, and lawyers pursue very sensitive tasks that may have important consequences on the future outcome of a procedure (and for citizens accessing to the justice system). Therefore, the issues of systems' liability and safety and the question of determining responsibility for AI failure are fundamental. These examples acknowledge that the development of AI technologies and their diffusion into the most disparate contexts of human life and work may result in an abrupt change in conditions deemed "normal".

[80] For more information: https://www.igsg.cnr.it/progetti-2/victims/

These changes may create concerns, uncertainties, or rejections. More specifically, the introduction of these technologies within justice systems may be perceived as an attack on the "normality" of the judicial administration context based on the compliance with procedural laws and fundamental values that refer to the generic concept of the rule of law. The creation of autonomous machines can really modify the "normal" as we have previously interpreted it, and moreover, due to the normative power of technology, it can create a normativity that may conflict with the actual institutional and constitutional setting. The phenomenon of the massive production of ethical guidelines, collections of principles, and framework documents – the so-called "ethification" phenomena – represents society's reaction to the attack on "normality" that autonomous technologies may bring. In this view, particular important are the binding rules of the EU AI Act, which has an impact on design and data governance obligations for digital systems containing AI-powered features, as well as the Council of Europe Framework Convention on AI, Human Rights, Democracy and Rule of Law, that describes internationally agreed principles related to activities within the lifecycle of artificial intelligence systems.

In particular, the AI Act (Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence) provides AI developers and deployers with clear requirements and obligations regarding specific uses of AI. It is the first-ever comprehensive legal framework on AI worldwide. The aim of the new rules is to foster trustworthy AI in Europe and beyond, by ensuring that AI systems respect fundamental rights, safety, and ethical principles and by addressing risks of very powerful and impactful AI models. The new rules: address risks specifically created by AI applications; prohibit AI practices that pose unacceptable risks; determine a list of high-risk applications; set clear requirements for AI systems for high-risk applications; define specific obligations deployers and providers of high-risk AI applications; require a conformity assessment before a given AI system is put into service or placed on the market; put enforcement in place after a given AI system is placed into the market; establish a governance structure at European and national level. The Regulatory Framework defines 4 levels of risk for AI systems:

- Unacceptable risk: all AI systems considered a clear threat to the safety, livelihoods and rights of people are banned, from social scoring by governments to toys using voice assistance that encourages dangerous behaviour.

- High risk: AI systems identified as high-risk include AI technology used in: critical infrastructures (e.g. transport); educational or vocational training, safety components of products; employment, management of workers and access to self-employment; essential private and public services; law enforcement that may interfere with people's fundamental rights; migration, asylum and border control management; administration of justice and democratic processes. High-risk AI systems are subject to strict obligations before they can be put on the market: for example, adequate risk assessment and mitigation systems, high quality of the datasets feeding the system to minimise risks and discriminatory outcomes, logging of activity to ensure traceability of results, detailed documentation providing all information necessary on the system and its purpose for authorities to assess its compliance.
- Limited risk: limited risk refers to the risks associated with lack of transparency in AI usage. The AI Act introduces specific transparency obligations to ensure that humans are informed when necessary, fostering trust. For instance, when using AI systems such as chatbots, humans should be made aware that they are interacting with a machine so they can take an informed decision to continue or step back.
- Minimal risk: The AI Act allows the free use of minimal-risk AI. This includes applications such as AI-enabled video games or spam filters.

The Council of Europe Framework Convention on Artificial Intelligence and human rights, democracy and the rule of law is the first-ever international legally binding treaty in this field. It aims to ensure that activities within the lifecycle of artificial intelligence systems are fully consistent with human rights, democracy and the rule of law, while being conducive to technological progress and innovation. It was adopted on 17 May 2024 by the Committee of Ministers of the Council of Europe at its 133th Session held in Strasbourg, and will be opened for signature on the occasion of the Conference of Ministers of Justice in Vilnius (Lithuania) on 5 September 2024.

It is also necessary to mention the CEPEJ European Ethical Charter on the use of artificial intelligence (AI) in judicial systems, [81] which sets out five key principles that

[81] For further information: Lupo, G. (2022), The ethics of Artificial Intelligence: An analysis of ethical frameworks disciplining AI in justice and other contexts of application. *ONATI SOCIO-LEGAL SERIES VOLUME 12*, ISSUE 3 (2022), 614-653.

can guide policy makers, legislators and justice professionals when they grapple with the rapid development of AI in national judicial processes:

- Principle of respect of fundamental rights: the processing of court decisions and data must have clear purposes, respecting the fundamental rights enshrined in the ECHR and the 1981 Convention on the Protection of Individuals with regard to the Automatic Processing of Personal Data. Artificial intelligence tools must above all guarantee the right of access to a judge and the right to a fair trial, and be used in accordance with the principles of the rule of law and the independence of judges.
- Principle of non-discrimination: AI systems used must not reproduce or aggravate the discrimination that may exist in a judgment. Instead, the algorithm must be monitored, especially when processing is based directly or indirectly on sensitive data.
- Principle of quality and security: the Charter considers it desirable to form mixed project teams in order to produce functional models which respect ethical and legal principles. In this sense, machine learning system programmers should be able to draw on the expertise of lawyers and other social scientists in designing this technology.
- Principle of transparency, impartiality and fairness: a balance must be struck between the protection of intellectual property and the need for transparency (understood as access to the creative process) and between impartiality (i.e., no bias) and equity (that is, to give priority to the interests of justice) when using instruments which may have legal consequences. The Charter considers it useful that the system can be explained in familiar and clear language.
- Principle “under user control”: CEPEJ believes it is necessary to affirm the autonomy of professionals who rely on these tools, which must be strengthened and not limited by these systems. Professionals must be free to distance themselves from the results produced by the AI system.

The fields of juvenile justice and child protection also intersect with these disciplines with the criminal justice system playing a vital role in addressing issues related to children and childhood. This field emphasizes both preventative measures and

intervention strategies aimed at protecting children's rights and promoting their well-being (National Research Council, 2013). Juvenile justice systems often collaborate with child protective services, especially in situations involving abuse, neglect, or exploitation, highlighting the need for a multidisciplinary approach (Finkelhor, 2008). Moreover, the United Nations Convention on the Rights of the Child emphasizes the importance of treating children in conflict with the law with respect and ensuring their right to education and care throughout legal processes (United Nations, 1989). The criminal justice field has long been interested in the impact of adverse childhood experiences (ACEs) on future criminal behavior, advocating for trauma-informed approaches in law enforcement and judicial systems to help disrupt cycles of violence and delinquency (Felitti et al., 1998).

In the following sections of this chapter, the unique developmental characteristics of children and adolescents will be explored, discovering how these factors influence their behavior, decision-making, and interactions with the criminal justice and child protection systems. Understanding these age-specific aspects is crucial for tailoring interventions that effectively address the needs of young individuals, ensuring that their rights and well-being are prioritized. By examining the complexities of childhood and adolescence, we aim to provide a comprehensive foundation for the discussions that follow, which will focus on strategies for supporting youth within these systems.

04

E-JUSTICE AND AI FOR VICTIMS IN THE COUNTRIES INVESTIGATED BY LINK

4.1 e-Justice in Civil sector in the Countries Investigated

The analysis of technologies in use in the civil sector is collateral to the research topic and is fundamental for achieving its objectives. This because several decisions affecting victims are not only taken in the criminal justice system. For instance, victim compensation for damages caused by crime or changes in the family status deriving from a criminal justice decision (for example, suspension or forfeiture of the parents from parental responsibility) are all dealt by civil judges in some countries. Since these relevant aspects relating to the rights of victims and their family life are dealt with in the context of civil proceedings, it is important to focus on the impact that e-justice has also had in the civil sphere. On the basis of this, our analysis even though mainly focused on the criminal justice system also investigated in part civil procedures that affect victims when needed. On the same basis, the analysis of e-justice technologies focuses not only on the technologies in use in the criminal justice system but also technologies diffused between civil justice professionals.

An important example of this is the Italian Civil Justice system which has undergone in the last years significant digital transformation with the introduction of the Civil Trial Online (Processo Civile Telematico, PCT). This system has led to the almost complete dematerialization of procedural files, requiring all actors in civil proceedings—lawyers, court staff, and judges—to manage and exchange documents electronically. The shift towards digital filings accelerated during the COVID-19 pandemic, and now applies to all types of civil, administrative, and tax-related procedures.

The PCT system involves electronic drafting, signing, preserving, and archiving of documents, which are transmitted digitally between parties and judicial offices. The introduction of PCT was supported by various legal amendments, including the Decree of the President of the Republic of 2011, which regulated the use of IT tools in civil trials, and subsequent laws mandating electronic filing. Central to the PCT system are the court's civil registries, known as Case Management Systems (CMS), specifically SICID for civil, labor, and voluntary jurisdiction trials, and SIECIC for enforcement and bankruptcy trials. These systems handle document deposits, notifications, and the overall management of electronic files. Judges interact with the system through the "Judge's Consolle" (in Italian: "Consolle del Magistrato"), which allows them to manage case files, draft and sign decisions, and conduct legal research. Lawyers access the PCT through the "Lawyer's Consolle" (in Italian: "Consolle dell'Avvocato") and the Access Point (PdA), which provide strong

authentication and secure, real-time interaction with the court's data. Certified email and digital signatures are essential for these exchanges. External access to PCT is also granted to court consultants and other authorized users through the Italian Portal of Telematic Services, with varying levels of access for lawyers, citizens, and other stakeholders. This system represents a significant shift towards the digitization of the Italian civil justice system, enhancing efficiency, transparency, and security in legal proceedings.

Table 1

Country	Name of the System	Type of System	Users	Brief Description
Italy	SICID	Case Management System	Court's staff	CSM for civil, labor, and voluntary jurisdiction trials. It handles document deposits, notifications, and the overall management of electronic files.
	SIECID	Case Management System	Court's Staff	CMS for enforcement and bankruptcy trials. It handles document deposits, notifications, and the overall management of electronic files.
	Judge's Consolle	Portal linked to CMS	Judges and Prosecutors	This system allows to judges to manage case files, draft and sign decisions, and conduct legal research.
	Lawyer's Consolle	Portal linked to CMS	Lawyers	It allows access to PCT to lawyers and it provides strong authentication and secure, real-time interaction with the court's data.
	Portal of Telematic Services	Portal linked to CMS	External users	It allows access to PCT to external users.

4.2 Criminal Justice Technologies for Professionals in the Countries Investigated

The development of criminal e-justice within the states involved in the research is rather heterogeneous and diversified: while in some countries, there is a massive and constant use of technologies by criminal justice professionals, in others, these tools are still in an embryonic or developing stage.

Italy

The Criminal Trial Online (Processo Penale Telematico, PPT) in Italy. The core system used in the PPT is the SICP (Sistema Informativo della Cognizione Penale), which manages all stages of criminal proceedings, including automatic file assignment. Judges and prosecutors access SICP through the "Consolle," which allows basic case management but has limitations, including partial interoperability with the other registries and the need for dual data entry. The PPT system also connects with the Police through the NDR portal (portal for crime reports; *portale delle notizie di reato* in Italian), enabling secure electronic transmission of crime-related documents. However, further integration with police databases like SDI is needed for more efficient data management. External users, including lawyers and citizens, can access the system through the Ministry of Justice's Telematic Services Portal, which offers public and restricted services. The portal allows for filing various legal documents and requests, providing a comprehensive digital platform for managing criminal trials.

Bulgaria

A **Unified Court Information System (UCIS)** was established within the court system. The System is a centralised web-based application for organising case management processes electronically. UCIS has been integrated with numerous external systems and registers, among which are the Unified Information System to Counter Crime (UISCC), the Integrated e-Justice Portal (IEJP), the Central Web-based Interface for Publishing Judicial Acts (CWBIPJA), the National Legal Aid Bureau (NLBA).

Czech Republic

In the Czech Republic, bodies involved in criminal justice keep their electronic record; thus, interoperability is not guaranteed.

Regarding file management, the Police of the Czech Republic use its electronic file management system, the so-called Information **System for Criminal Procedure Records.** This system is not public. The Public Prosecutor's Office also has a closed system for case file management. However, the original case file is in paper form. It's the same with court filings.

Lithuania

The main technological system the courts use in Lithuania is the **Lithuanian Courts Information System (LITEKO).** It is used to electronically manage the data related to cases in the Lithuanian courts, record the progress of the proceedings, and provide conciliation, mediation and other public electronic services following legal acts. Concerning data sharing, LITEKO includes a subsystem for data exchange and integration.

The electronic services portal **www.e.teismas.lt**, managed by the National Courts Administration, is part of the LITEKO system: participants in court proceedings can use the system to familiarise themselves with the documents accepted by the court, pay duties and fees, listen to the audio recordings of the court hearings. These services may be used by both court employees and external users (e.g., lawyers).

Additionally, individual courts publish specific information on their respective websites and links to www.teismai.lt. The electronic portal can be used by anyone who can identify themselves electronically.

Portugal

The **Citius** platform offers a comprehensive digital solution that allows all information and documents related to a case to be easily accessible by all professionals including the courts and the lawyers. The Portuguese judicial system boasts a legal-documentary database developed by the Institute of Management and Equipment of Justice, which provides access to court decisions issued by the country's Courts of Appeal, Supreme Court of Justice, and Constitutional Court.

Slovenia

In Slovenia, the court staff uses the Information **System for Monitoring Criminal Proceedings, or i-K system,** to share case-related information. The system is used to share case-related information internally, that is, among court staff. Furthermore, the

system is incompatible with the systems used by other judicial authorities. The i-K system allows for the systematic assignment of criminal cases.

Hungary

The BIIR (Court Integrated Information System) is a specialised IT platform that consolidates applications and databases to support court administration, adjudication, and decision-making processes.

"**Protecting our Children System**" digital system (CPS) was officially launched on 1 October 2020 as a nationwide, unified information technology platform designed to support the child welfare and child protection sector in Hungary. It has been integrated into the broader framework of the National Social Information System. The CPS facilitates specialised child protection services, primary care, and the preparation and follow-up of adoption procedures. The system's overarching goals include the acceleration of administrative processes, enhancement of transparency, and the establishment of modern, electronic administrative practices among professionals operating within the sector.

As of 1 July 2021, all family and child welfare service providers are required to document service usage within the CPS. The system also mandates the registration of cases signalled for intervention. Such signals may be prompted by a range of factors, including: housing instability, financial difficulties, parental health issues, structural characteristics of the family, parenting practices, problems in family life management, instances of child abuse, the behaviour of the child concerned, and the child's health status—specifically in cases involving disabilities, behavioural disorders, learning difficulties, chronic illnesses, or academic performance concerns.

Table 2

Country	Name of the System	Type of System	Users	Brief Description
Italy	SICP (Sistema Informativo della Cognizione Penale)	Case management system	Judges and prosecutors	Core system used in PPT, which manages all stages of criminal proceedings, including automatic file assignment.
	NDR Portal	Portal linked to CMS	Police	The portal allows the transmission of crime reports to the competent prosecutor's offices.
	Ministry of Justice's Telematic Services Portal	Portal linked to PPT	External Users (including lawyers and citizens)	The portal provides a comprehensive platform for managing criminal trials digitally.
Bulgaria	Unified Court Information System (UCIS)	Centralised web-based application for organising case management processes electronically.	Judges, prosecutors and lawyers	UCIS integrates the entire case management process, from the registration of the initiating documents, through to the initiation of a case, the random distribution of cases, management of court hearings, court statistics, automatic calculation of judges' caseloads, financial management of the cases, management of summons activity, including via the available mobile application for summoners.
Czech	System for Criminal	File management	Police	Electronic file management system used by the Police.

Republic	Procedure Records.	system		This is not a public system.
Lithuania	Lithuanian Courts Information System (LITEKO)	Case management system	Court's staff and external users	Used to electronically manage the data of cases in the Lithuanian courts, to record the progress of the proceedings and to provide conciliation, mediation and public electronic services in accordance with legal acts. It includes a subsystem for data exchange and integration.
	www.e.teismas.it	Electronic services portal	Court employees and external users (e.g., lawyers)	Through this portal, participants in court proceedings can pay duties and fees, listen to the audio recordings of the court hearings, find information about the date and time of their criminal hearing, the specific judge hearing the case, the final court decision or related to assistance to victims.
Portugal	Citius	e-filing – linked to CMS	Court's staff and lawyers	The platform offers a comprehensive digital solution that allows all information and documents related to a case to be easily accessible.
Slovenia	Information System for Monitoring Criminal Proceedings (i-K system)	Case management system	Court's staff (registrars, typists, assistants, and	The system is used to share case-related information internally and allows for the systematic assignment of criminal cases.

			judges)	
Hungary	BIIR	Court Integrated Information System	Judges, Court clerks and administrative staff, prosecutors and lawyers, court management and the National Office for the Judiciary (NOJ), Other authorised legal professionals and public authorities	It is a specialised IT platform that consolidates applications and databases to support court administration, adjudication, and decision-making processes.
	“Protecting our Children System” digital system (CPS)	IT platform integrated into the National Social Information System	Child welfare and child protection sector	A nationwide IT that streamlines child welfare services, including specialised care and adoption. Integrated into the National Social Information System, it aims to speed up administration, improve transparency, and support digital collaboration among professionals.

4.3 Criminal Justice Technologies for Sharing Legal Information to Citizens in the Countries Investigated

The use of e-justice technologies for sharing information to citizens is diffused in all the states involved in the research. Below, a more analytic description of the systems utilized in each country investigated.

Italy

The Italian PPT (Criminal Trial Online, in Italian *Processo Penale Telematico*) allows access to external users such as lawyers or generic citizens. This is possible due to the implementation of the Telematic Services Portal of the Ministry of Justice (in Italian: *Portale dei Servizi Telematici del Ministero della Giustizia*). Through access to the Telematic Services Portal of the Ministry of Justice, multiple telematic services are available: some in the public area (available to all citizens without user authentication), others in a reserved area (accessed with computer authentication). Public area services concern, for example, access to information on judicial offices or consultation of public registers; the reserved area services concern, among others, access to the Online Criminal Trial Portal, mainly utilised by lawyers and the Digital Interception Archive (in Italian: *Archivio Digitale Intercettazioni*).

Bulgaria

The following portals (managed by different bodies involved in criminal justice) are available for legal information provision:

1. *Electronic Justice in the Court System*: two portals should be mentioned:
    a. **Integrated e-Justice Portal (IEJP)**: the portal is an electronic database of court cases handled by all courts in the Republic of Bulgaria. It allows everyone to access general information about all court cases with free public access. In addition, IEJP provides an opportunity for registered access to the full electronic file of a particular court case, including all the documents in the court's case. The court grants access to the electronic case following the filing of a request by a party to the case or its legal representative.
    b. **Portal for electronic notification and serving of subpoenas**: in this portal, the parties and their legal representatives have access to the electronic copies of their subpoenas and notifications.

2. *Electronic justice in the prosecution system*: On the official website of the Prosecutor's Office of the Republic of Bulgaria, an electronic portal with access to electronic services has been created. The platform can be accessed after registration in the portal. By using a qualified electronic signature, citizens can request services, including submission of reports and complaints of a crime, domestic violence, submission of claims, comments, objections, appeals of acts, infringing upon the rights and legal interests of the defendants and the victims, requests for the issuing of various certificates.
3. *Electronic access to the police system*: The official website of the Ministry of the Interior provides access to a **Portal for electronic administrative services of the Ministry of Interior (PEAS)**. It provides an opportunity to use electronic services, but only administrative ones. There is no option for filing reports and complaints of crimes.
4. *Electronic access to the Child Protection System*: *T*here is no electronic access to the Child Protection System (the Child Protection Departments). The only option available is to submit a request for electronic administrative services on the Agency for Social Assistance (ASA) website.

Czech Republic

The Ministry of Justice operates an electronic **Register of assistance providers to victims of crime**. A victim can search for legal aid providers and non-profit providers in this register. There is also contact information for the Probation and Mediation Service. Last, automated protocols are provided in the courts, and AI-assisted voice transcription (a software for Czech language transcription called **Bee** has been developed).

In the Czech Republic, each component of the criminal procedure system has its software in which it keeps a file, but the official version of the file is only on paper. The police keep a file in the so-called **Criminal Procedure Register**. A citizen may obtain information collected by the police in the register based on a request for information. The public prosecutor primarily maintains the file in documentary form and subsequently forwards this documentary version of the file to the court. The court shall again keep the file in paper form. Each of these files has its electronic system, but these are only supportive.

Lithuania

Reporting crimes to the police is possible via an online police portal (**www.epolicija.prisijungti.lt**). Also, the **EPP portal** provides electronic services that allow the participants of the pre-trial investigation to receive relevant information about the pre-trial investigation in which they are participating, correspond with the investigator of the pre-trial investigation, to submit new procedural documents and/or complaints about the ongoing pre-trial investigation.

Portugal

The **Electronic Complaint System**. This system allows people to complain for certain types of crimes, such as simple physical harm, domestic violence, bad treatment, human trafficking, pimping, theft, robbery, and more. Victims must contact or go to a judicial authority or law enforcement agency for crimes not covered by the system. The **Infovictims website (https://www.infovitimas.pt/en)** provides all citizens with access to user-friendly information about victims' rights in criminal proceedings, using either text or interactive tools.

Slovenia

Information system "e-Sodstvo" is currently in the testing phase. Through this portal, users will have access to various e-procedures, including submitting electronic applications in criminal proceedings**.** The information system will allow the delivery of messages to secure electronic mailboxes opened by authorised secure electronic mailbox providers and directly to the information systems of external stakeholders.

Table 3

Country	Name of the System	Type of System	Users	Brief Description
Italy	Telematic Services Portal of Ministry of Justice	Portal	External users (lawyers or generic citizens) with or without autentication	Through this portal, multiple telematic services are available: some in the public area, available to all citizens without the need for user authentication (for example, access to information on judicial offices or consultation of public registers); others in a reserved area, accessed with computer authentication. The portal also allows the filing of documents (for example, recusal of the judge; request for transmission of documents to a different public prosecutor).
Bulgaria	Integrated e-Justice Portal (IEJP)	Portal	External users (free public access). Access to a particular electronic case in the system is granted only to the parties and their representatives	Electronic database of the court cases, handled by all courts in the Republic of Bulgaria. It provides an opportunity for registered access to the full electronic file of a particular court case, including to all the documents contained in the court's case.
	Portal for electronic	Portal	Parties and their representatives	In this portal the parties and their legal representatives have access to the electronic copies of their subpoenas and notifications.

	notification and serving of subpoenas			
	Portal for electronic administrative services of MoI (PEAS)	Portal	Users with electronic authentication	It provides administrative electronic services.
Czech Republic	Register of providers of assistance to victims of crime	Electronic register	Victims	In this register, a victim can search for both legal aid providers and non-profit providers. There is also contact information for the Probation and Mediation Service.
	Criminal Procedure Register	Electronic register	Citizens	A citizen may obtain information collected by the police in the register on the basis of a request for information pursuant to Act No. 106/1999 Coll. on Free Access to Information.
Lithuania	EPP Portal	Portal	Authenticated and logged-in users who have legitimate	This portal provides electronic services that allow the participants of the pre-trial investigation to perform actions related to the pre-trial investigation.

			interest in an ongoing investigation	
Portugal	Electronic Complaint System	Portal	Individuals duly identified, domestic or foreign residents in Portugal or present in the country.	This system allows citizens to complain for certain types of crimes, such as simple physical harm, domestic violence, bad treatment, human trafficking, pimping, theft, robbery, and more. For crimes not covered by the system, victims must contact or go to a judicial authority or law enforcement agency.
	Infovictims website	Website	Citizens	This website provides all citizens the access to user-friendly information about victims' rights in the criminal proceedings, using either text and or interactive tools.
Slovenia	e-Sodstvo	Platform	Individuals (authenticated and not authenticated)	This information system allows to different types of users (authenticated and not authenticated) to perform criminal tasks.

4.4 Videoconferencing Technologies in the Countries Investigated

The analysis also explored the use of video technologies in the criminal justice systems investigated. As suggested in Part 1, such video conferencing facilities need to be built to be accessible to children with disabilities, offering summaries of what has been stated and text captions or audio descriptions of the video content. The accessibility features of mainstream conferencing tools such as Teams and Zoom are increasing extensively and can be used by persons using Assistive technologies.

Italy

In Italy, videoconferencing technologies are used in various legal contexts, especially in criminal cases involving vulnerable or intimidated witnesses, experts, and defendants. These technologies range from commercial services like Skype or Microsoft Teams to more complex setups that involve separate facilities or portable equipment.

The use of audiovisual technology in legal hearings began in the 1990s, particularly during major mafia trials. Article 147-bis of the implementing rules of the criminal procedure code introduced the remote examination of justice collaborators, and by 1998, remote participation of detained defendants was permitted under Article 146-bis. This shift aimed to enhance efficiency in complex mafia trials and to protect the rights of numerous defendants involved in such cases.

Significant legal changes occurred with the legislative decree of 2001, which made remote participation more common, not just for organized crime but also for cases involving terrorism or subversion of the constitutional order. Further advancements in remote participation were made with the 2017 law, which extended the use of videoconferencing to defendants at liberty in specific cases and allowed remote participation in council chambers and simplified proceedings.

The COVID-19 pandemic further accelerated the use of videoconferencing in both criminal and civil proceedings. The "Cartabia Reform" of 2021 led to the government issuing guidelines for cases where remote participation is allowed with the parties' consent. As a result, a new title, "Remote Participation," was added to the criminal procedure code to regulate these methods.

For vulnerable victims, such as children with disabilities, special protocols are in place. These might involve setting up video connections in specialized care facilities

or even at the child's home. In specialized facilities, the child might be examined in a room with a one-way mirror, video recording system, and internal intercom. These can help address the need for supportive environments as described in Part 1.

Czech Republic

A project that can be mentioned in the context of the protection of victims of crime with specific needs is the increased use of videoconferencing in court hearings, for which sufficient technical facilities need to be established (according to the material, the project to strengthen this method of communication was already completed by the end of 2022). A novelty regarding the involvement of IT in criminal proceedings is the so-called Polpoints, which are non-contact or semi-contact rooms in which a reporter or witness can make a report, give a statement or give an explanation. PolPoints can also be used online.

Lithuania

Video technology is utilised at various stages of legal proceedings, across both civil and criminal cases. Video conferencing, introduced in 2014, facilitates remote participation in court hearings, interviews, and testimonies for witnesses, victims, and individuals unable to attend physically. Child witnesses can use special rooms in the court buildings to provide their video testimonies. Support is provided by forensic psychologists.

However, this is not always straightforward in practice. As it was noted by a Legal Guardian of a child with a disability in one of the semi-structured interviews, the technology and other related circumstances do not always work to protect the integrity and well-being of the child victim of crime.

4.5 AI Projects and innovations in justice in the Countries Investigated

Pilot projects on the use of AI in the judicial system have been launched in the states involved in the research. In some countries, these projects are multiple and at an advanced stage: for example, in Italy numerous projects have involved courts, universities and research bodies; in Portugal, interest in the development of AI projects was expressed above all by private companies; in Slovenia, the development of AI projects for criminal justice is the prerogative of the Supreme

Court. Differently, in the Czech Republic, the use of artificial intelligence is still in its early stages.

Below, a more analytical description of the projects launched in the various states involved in the research. Many of these projects have additional benefits for those with disabilities, recognising the additional stress and burden they experience in the justice system. Systems that allow for online submission and participation have particular value for this group. Such projects can help alleviate some of the challenges described in the justice system described in Part 1.

Italy

In Italy, several AI pilot projects are being tested in the civil and criminal justice systems:

- **Court of Florence**: A predictive justice algorithm analyzes civil cases for mediation opportunities, potentially impacting family status and compensation related to victims.
- **Bari Court of Appeal**: The "Praedicta" project, involving judges and the University of Bari, explores predictive justice applications, potentially benefiting victims by improving justice system efficiency.
- **Court of Appeal of Reggio Calabria**: The "IustitIA" project uses AI to reduce litigation times and improve justice system performance, positively impacting victims' access to justice.
- **Court of Appeal of Venice**: In collaboration with Ca' Foscari University, a project uses AI to predict trial outcomes in labor law, which could be adapted for criminal justice.
- **Scuola Superiore S.Anna's "Predictive Justice" Project**: the project focuses on anonymization, creating a case-law database, and developing predictive models, which could enhance justice system efficiency and protect vulnerable groups.
- **Court of Appeal of Brescia**: A project predicts case duration and legal orientations, aiming to simplify legal language, thereby improving access to justice for citizens and victims.

- **Giove**: A predictive policing system by the Ministry of the Interior, uses AI to predict where and when crimes may occur, aiding crime prevention and victim safety.
- **Meta-Just**: Though not AI-based, this project explores the Metaverse for legal purposes, including improving access to justice and training legal professionals using Immersive Virtual Reality. This could help vulnerable groups to participate in trials in a protected setting.

Portugal

The GovTech Justice Strategy aims to create a suite of innovative and digital transformation initiatives that accelerate the modernisation of the judiciary system. To this end, a protocol was signed between the Foundation for Science and Technology (FCT) and the Institute of Financial Management and Justice Equipment (IGFEJ) to promote research and innovation projects within the scope of the GovTech Justice strategy.

Many companies are keen on developing Artificial Intelligence (AI) projects. For instance, a company in Covilhã created a computer system that uses AI to support decision-making in the area of criminal justice, by providing information about the likelihood of prisoner violence, suicide, and recidivism. Although this project is more aimed at defendants, it could certainly be a step forward the development of similar projects for victim's support.

Slovenia

The Project Management Service states that the court staff's use of the i-K system's functionalities does not anticipate the use of AI. However, separate projects are underway. The production of hearing transcripts and the transcription of a judge-dictated court decision are both using AI on a pilot basis. It is planned to be used for document search, for analysing case law, for anonymizing court decisions at all levels, and for classifying motions for review in court proceedings. The development is being carried out within the framework of Supreme Court projects.

4.6 Technical accessibility for persons with disabilities in the Countries Investigated

Technical accessibility is essential to any digital solution in the justice system. To address the barriers expressed in Part 1 of the report, a system compliant with accessibility standards is required. The use of assistive technologies and features is

built upon the premise of accessible design of software and content. Very few systems are likely to address the needs of those with intellectual disabilities as these are not well considered in international standards such as W3C WAI.

The accessibility of e-justice systems for persons with disabilities varies depending on the State considered. In some states there is great attention to the topic. In particular, in Italy there is a specific regulation on the matter, dictated by law 9 January 2004, n. 4, containing "Provisions to facilitate the access of persons with disabilities to IT tools". The Lithuanian system is also quite developed from this point of view: the main website www.teismai.lt adapts to the needs of people with visual disabilities - as it allows to regulate the design, the size of the text, etc. – and auditory, providing informative videos with subtitles. Differently, the Bulgarian, Czech, Slovenian and Portuguese systems are still in the development phase: in Bulgaria, the available e-justice systems provide information that is not suitable, adjusted and accessible for children with disabilities; in Portugal, the accessibility of systems for users with disabilities is limited (it is plausible that the modernization of the judicial system and the integration of new digital technologies will enhance accessibility for individuals with disabilities); in Slovenia, the e-Sodstvo portal is not (yet) fully accessible to children and persons with disabilities .

A case-by-case analysis follows.

Italy

The accessibility of the IT systems in use in the Italian judicial system is guaranteed and regulated by law 9 January 2004, n. 4, containing "Provisions to facilitate the access of persons with disabilities to IT tools". The legislation makes it mandatory for public entities or private individuals who provide public services to allow the access and use of assisted technologies on websites and software to people with disability.

In the justice sector, the DGSIA (*Direzione generale per i sistemi informativi automatizzati*; General Directorate for Automated Information Systems) provides useful information and regulatory references, based on the laws currently available on the subject to public entities, such as the Ministry of Justice and courts for the implementation of accessible IT services and websites. According to the legislation, accessibility is understood as the ability of IT systems including websites and mobile applications, in the forms and within the limits permitted by technological knowledge, to provide services and usable information, without discrimination, also to those who,

due to disabilities, require assistive technologies or particular configurations. Particular attention is given to some critical pages, for example those that contain data tables, forms, clickable maps, images with information content, facsimiles of forms or diagrams, Adobe PDF documents, Microsoft Excel documents. In addition, the Agency for Digital Italy: a) monitors the implementation of the law; carries out periodic monitoring of the compliance of websites and mobile applications in terms of accessibility, also making use of the Higher Institute of Communications and Information Technologies (ISCOM).

Bulgaria

The systems for electronic justice and the systems for access to legal information have no accommodations for persons with disabilities, with the exception of the Integrated e-Justice Portal (IEJP), [82] the portals for electronic services of Ministry of Foreign Affairs and of the Agency for Social Assistance, which have accessibility features and functionalities on their websites but they provide administrative services outside the system of criminal investigation and justice.

In addition, the direct use of the portals made it possible to establish that the information provided is not suitable, adjusted and accessible for children. There are no explanations and presentation of children's rights in criminal justice, both generally and with relation to the particular case where they are a party to or a participant. In order to access electronically such information on a case, the child needs the assistance of a competent adult, for registration and use of electronic signature. None of the portals contains information, which is presented in an easy-to-read language, uses visualisations or any other means, which would facilitate the child's understanding, regardless of whether they are with or without disabilities.

Czech Republic

The use of information technology in (not only criminal) justice is recommended in the literature, but so far it has not been effective in practice, *"...electronic communication, videoconferencing and other facilitation of information transfer between the*

[82] In particular, Certain modifications are made to IEJP to facilitate the access of persons with disabilities to it. It enables the access of people with dyslexia. There is also an option to change some settings, such as font and brightness. An Accessibility Policy has been published, making the commitment that "the system will attempt to cover a level of accessibility according to the latest standards of the World Wide Web Consortium - Web Content Accessibility Guidelines 2.0 (WCAG 2.0), by using the best practices and techniques. WCAG 2.0 explains how to make content on websites more accessible to persons with disabilities." Other modifications or more substantial changes, facilitating the access of persons with disabilities are not in place at the time of the drafting of this report.

participant and the court can have a significant positive effect in this respect. In our conditions, they can address not only the situation of litigants with limited mobility.... Another obstacle that technology can remove is the lack of knowledge of the official language. The use of simultaneous interpretation or advanced machine translation of electronic documents can facilitate the equal status of linguistically different parties to proceedings. Where the barrier is a sensory hearing or visual impairment, the computerisation of proceedings and the related digitisation of documents and evidence can bring both improvements to the current situation and new challenges and obstacles. The transferability of information into another format can greatly facilitate the familiarisation of disabled people with the content of documents, but it imposes new requirements for the existence of appropriate mechanisms and accessibility, including in the context of cost barriers to access to the courts". [83]

According to the information of the IT representative at the Ministry of Justice of the Czech Republic, under which the courts and prosecutor's offices fall, the accessibility of the court system for people and children with intellectual disabilities will be solved in 2030. This shows that the Czech legal system is currently solving problems at a basic level, e.g. accessibility for all, interconnection of files, accessibility for persons with specific needs.

Lithuania

The main website www.teismai.lt and the individual court websites have installed the accessibility menu (UserWay) plugins, which allow people with visual impairments to adjust settings for adaptation to persons with disabilities , such as text contrast, size, saturation, as well as possible settings for persons with disabilities , dyslexic conditions, and others. In the electronic services portal for criminal cases system, you can use the available ‘video help’ to support you to understand how the criminal cases system portal works and what technical steps need to be taken in order to submit, view documents in the system or perform other actions. However, this is unlikely to be accessible to children without the help of an adult.

On the website www.sale.teismai.lt, informational videos with subtitles are available to educate relevant parties on what to expect, if they are called to testify, how to use electronic services, what is the job of the judge, and more.

[83] KASL, F., Některé problematické aspekty současného vývoje eJustice *(Some problematic aspects of the current development of eJustice)*. Správní právo. Ročník 2018, č. 4.

It has been recently established in Lithuanian law that a person with a disability has the right to receive information in the accessible method(s) of communication, free of charge in at least one of their chosen accessible means of communication or in Lithuanian sign language, on an equal basis with other persons. Some information about victim rights is available in Easy-to-Read and Sign language.

While some resources for victims of crimes with sensory disabilities were found during the research study on the government websites, no specific mention was found regarding the needs of children with other types of disabilities.

The Information Society Development Committee conducts annual surveys since 2021, to ensure that state and municipal institutions comply with established accessibility requirements for websites and mobile applications. Their evaluations employ two methods: a detailed monitoring and simplified monitoring. The detailed monitoring method examines various aspects such as form interactions, interfaces, data entry confirmations, error messages, and website performance under different settings, as well as accessibility for users with disabilities.

The simplified monitoring method investigates 131 websites, including those under the Ministry of Justice, using automated testing tools to assess compliance with the harmonised standard. The tools address a range of user accessibility needs, including visual impairment, limited vision, colour perception, hearing impairment, speech impairment, limited hand movement or strength, sensitivity to light, and cognitive abilities. The 2023 assessment results indicate that institutions under the Ministry Justice and their websites meet the established criteria for accessibility. The assessment does not include age- or gender-appropriate information.

The assessment conducted by the Information Society Development Committee is considered to be quite extensive, although lacking information on information accessibility for children. In conducting assessments for the accessibility of the website and mobile application, adherence to Directive (EU) 2016/2102 is reviewed, ensuring compliance with specified standards and technical specifications outlined in Article 6 of the directive. The methodology is also guided by the Commission Implementing Decision (EU) 2018/1524. The evaluation process incorporated the Committee Director's 2013 order on methodological recommendations and the latest updates of the European harmonised standard EN 301 549 V3.2.1 (2021-03). Committee experts use simplified monitoring method, which allows to identify non-compliance with the Web Content Accessibility Guidelines (WCAG) 2.1. The

assessment involves selecting three typical page templates for each website and employing expert methods to determine keyboard navigation capabilities. Automatic tools recommended by the World Wide Web Consortium (W3C) Web Accessibility Initiative are used in the evaluation process.

Portugal

Currently, the accessibility of systems for users with disabilities is reported to be limited. However, it is anticipated that the modernisation of the judicial system and the integration of new digital technologies will enhance accessibility for individuals with disabilities. Efforts are underway to establish a dedicated courtroom for children, indicating progress in this regard. Consequently, it is imperative for entities to devise mechanisms to ensure that digital systems are accessible to children with disabilities, especially those with intellectual and psychosocial disabilities, as well as users of Augmentative and Alternative Communication (AAC) systems.

Slovenia

The e-Sodstvo portal is not (yet) fully accessible to persons with disabilities , according to the Project Management Service. The redesign of the sub-portal to allow e-filing in criminal proceedings is included in the redesign of the Judiciary-wide website. The redesign will provide a single-entry point to all general information and sub-portals for e-filing for all court proceedings and will comply with the Accessibility of Websites and Mobile Applications Act (ZDSMA). The redesign of the Judiciary's website will be carried out in the framework of the Environment, Business and Citizen Friendly, The e-Court Project (Okolju, podjetjem in državljanom prijazno e-sodišče) which is currently underway as part of the Recovery and Resilience Plan. The system does not seem to be particularly adjusted to children. In terms of ICT technology, there is currently no subtitling of audio-visual recordings, such as for deaf and deaf-blind people. According to the Project Management Service at the Slovenian Supreme Court, the Ministry of Justice must provide funding for the equipment purchase. The Supreme Court plans to purchase the software in the near future.

05

ASSISTIVE TECHNOLOGIES

Assistive Technology (AT) encompasses a wide range of devices and methods to accommodate individuals with disabilities to ensure equitable access within various environments, including judicial systems. This chapter elaborates on several categories of AT, emphasising their importance in facilitating accessibility and participation for young persons with disabilities in court settings.

Assistive Technology includes traditional physical aids like wheelchairs and glasses and Digital Assistive Technologies (DAT), which enable access to digital content through devices like computers and tablets. The justice system's role is typically to accommodate these aids rather than provide specialist AT. However, there are scenarios for individuals with vision impairments needing screen readers where the justice system should provide specifically configured devices. The provision of AT in judicial contexts relies on recognising accessibility needs and adhering to Universal Design principles (please see annex 1 for more information).

5.1 Vision Impairments

Individuals with vision impairments may require various assistive methods to engage fully with court proceedings:

- Braille: A tactile writing system allowing individuals to read documents by touch. Braille documents can be manually typed or produced electronically with Braille embossers. However, proficiency in Braille among European youth is relatively low (around 10%), making audio systems preferable for most.
- Tactile Graphics: Maps, diagrams, and graphs can be transformed into tactile forms using thermoforming machines, making them readable through touch. Specialised embossers can also produce tactile graphics alongside Braille.
- Audio: Document and screen readers transform textual information into speech, assisting individuals who rely more effectively on auditory rather than visual content. These tools ensure vital communication elements, such as body language or evidence descriptions, are conveyed audibly.
- Magnification: Simple magnifying glasses or electronic magnifiers are practical tools in judicial contexts. They facilitate the enlargement and readability of printed and digital texts. Electronic magnifiers also offer adjustable contrast and brightness settings.

- Colours, Contrast, and Print: Documents presented with high contrast (e.g., black text on a yellow background) and in large print significantly enhance readability. Appropriate font choices and adequate spacing further assist readability for partially sighted individuals.

5.2 Hearing Impairments

Clear communication strategies are crucial for individuals with hearing impairments. Effective approaches include:

- Ensuring speakers speak clearly and directly facing the individual to facilitate lip-reading and interpretation of facial expressions.
- Providing sign language interpreters and written transcripts of proceedings.
- Utilising assistive listening devices such as hearing loops or FM systems that amplify sounds directly to the user and reduces background noise interference.

Advanced solutions include Communication Access Real-time Translation (CART), where spoken dialogue is instantly transcribed into text, and Video Relay Services (VRS), allowing remote sign language interpretation. Smartphone applications offering speech-to-text capabilities also support real-time communication, though accuracy should be verified.

5.3 Physical Disabilities

Physical disabilities require accommodations to ensure accessibility to court buildings and participation in judicial processes:

Environmental Accessibility: Facilities must feature ramps, handrails, wide doorways, accessible restrooms, and appropriate seating arrangements. Signage should be clear and visible from seated positions.

Computer Access Solutions: Accessing digital content can involve customised or alternative input devices:

- Word Prediction Software: Reduces keystrokes required, aiding individuals with limited dexterity.
- Keyguards: Overlays preventing accidental key presses, beneficial for users with tremors or limited motor control.
- Adaptive Keyboards and Mice: Ergonomic designs and customisable sensitivity settings facilitate easier use.

- Speech Recognition: Enables computer control and text input through voice commands, essential for users with restricted mobility.
- Head Tracking Technology: Cameras interpret head movements into cursor controls, allowing hands-free computer operation.
- Switch Access: Employs simple switches activated by various body parts, providing alternative computer control.
- Eye Gaze Trackers: Follow eye movements to control cursor positioning, beneficial for individuals with highly limited mobility.

5.4 Learning and Intellectual Disabilities

Individuals with intellectual disabilities face unique challenges in judicial settings due to complexities in communication and information processing:
Environmental Modifications: Court environments should be tailored to simplify complex information, use clear language, and provide visual supports and quiet spaces. Staff training in cognitive support is essential.
Visual and Cognitive Aids:

- Printed Mind Maps: Visually organise complex information to simplify comprehension during legal proceedings.
- Symbols and Pictures: Supplement textual materials with visual aids, enhancing understanding for individuals who benefit from pictorial representations.
- Visual Reminders: Tools utilising icons or apps assist individuals in keeping track of court dates and procedural tasks.
- Text-to-Speech Technology: Converts digital text into audible speech, assisting those with reading difficulties.
- Speech Recognition: Provides an alternative method for text entry, reducing reliance on literacy skills.
- Memory Aids: Digital apps that store and prompt recollection of critical case details, procedural sequences, and court instructions.

5.5 Innovations and Future Considerations

The ongoing evolution in Assistive Technology promises enhanced accessibility and broader application possibilities. Future innovations include more sophisticated and accurate real-time communication technologies, enhanced tactile and audiovisual interfaces, and improved adaptive technologies enabling more seamless interaction

with digital resources. Emphasising user-centred design and continuous feedback from individuals with disabilities will ensure that technologies evolve to meet actual needs effectively.

In conclusion, assistive technologies are integral to providing fair and equitable judicial processes for individuals with disabilities, especially young people. Effective implementation involves careful planning, training, and commitment to accessibility and inclusivity standards. Understanding individual needs, combining traditional and innovative technological solutions, and maintaining flexibility in accommodating specific disabilities are crucial components in achieving accessible justice.

06

AAC TECHNOLOGIES FOR VICTIMS

Augmentative and Alternative Communication (AAC) technologies offer essential tools and techniques enabling communication for individuals unable to speak. These methods address a range of communication impairments due to conditions such as autism, cerebral palsy, trauma-induced disabilities, or temporary medical conditions. AAC systems generally are not diagnosis-specific but depend on individual communication, physical abilities, and cognitive skills. Often, children involved in legal systems already utilise AAC, though these systems may require customisation for courtroom interactions (for more detailed information on AAC, please refer to Annex 2)

AAC approaches range from low-tech to mid-tech to high-tech solutions without implying hierarchical superiority. The selection should always consider user preferences, possibly combining technologies alongside unaided communication (e.g., gestures or vocalisations).The following section provides a brief overview of AAC systems.

6.1 Low-Tech AAC Solutions

- Low-tech AAC includes easily accessible paper-based methods.
- Single Communication Cards: These use individual symbols, photographs, or images to convey basic concepts or answer simple queries by pointing.
- Digital Symbols: A ready-to-use symbol set for justice professionals working with AAC users was developed and made available online as part of Project LINK. The symbols and Symbol Creator AI can be found at www.globalsymbols.com https://globalsymbols.com/symbolsets/link-project?locale=en&page=3
- Communication Boards: Display multiple symbols, allowing users to create phrases or sentences through pointing, aiding broader non-verbal dialogues.
- Picture Exchange Communication System (PECS®): Begins with users exchanging symbols to express needs, progressively forming complex communication.
- Communication Books: These books contain multiple pages of thematic symbols or images, facilitating structured conversations.
- Alphabet Boards: Users with literacy skills spell words or sentences by indicating letters through gestures or eye movements.

- E-Tran Boards: Transparent boards using eye movement indicators to communicate letters, symbols, or words.
- Visual Scene Displays: Employ context-rich images to describe situations difficult to express through individual symbols.
- Talking Mats™: Structured visual symbol placements supporting nuanced discussions, opinion expressions, and complex decision-making.
- Communication Passports: Documents detailing a user's communication preferences and personal information, facilitating smoother initial interactions.
- Wearable Symbol Systems: Wristbands or keychains offering portable communication solutions via accessible symbol sets.

Advantages of low-tech solutions include ease of use, simplicity, customizability, accessibility, and reduced anxiety. However, limitations involve difficulties expressing complex or abstract ideas, vocabulary limitations, contextual ambiguities, and dependency on external support, raising ethical considerations regarding informed consent and accurate interpretation in legal settings.

6.2 Mid-Tech AAC Solutions

Mid-tech AAC solutions are often powered devices featuring limited pre-recorded verbal responses.

- Single-Message Devices: Simple button-activated systems providing a quick, single recorded response (e.g., "yes" or "no").
- Sequential Message Devices: Allow messages to be delivered sequentially through successive button presses, suitable for structured interactions.
- Talking Photo Albums: Provide recorded messages linked to personal images, aiding communication about personal experiences or legal proceedings.
- Go-Talk Devices: Offer varying capacities (from few to many symbols), allowing tailored pre-recorded verbal outputs triggered by pressing associated symbols.

These mid-tech devices provide enhanced verbal interaction compared to low-tech solutions, benefiting users with limited dexterity and literacy challenges. However, they face constraints like static displays, limited vocabulary flexibility, and dependence on communication partner support for updates. Ethical risks encompass

potential misunderstandings, informed consent, social stigmatisation, and ensuring unbiased interactions within legal contexts.

6.3 High-Tech AAC Solutions

High-tech AAC devices are sophisticated electronic systems facilitating extensive and dynamic communication.

Dedicated AAC Devices: Include specialised hardware with built-in communication software, speech synthesis, and adaptive input methods (eye-tracking, switches). Robust construction and environmental controls enhance user independence.

Non-dedicated Devices: Utilise mainstream devices like tablets and computers with specialised AAC applications, offering extensive customizability and broader usage contexts (internet, social media, environmental controls).

High-tech systems significantly broaden communication possibilities, integrating advanced features such as dynamic symbol displays, predictive text, grammatical support, and extensive vocabulary capabilities. They also incorporate user-specific adaptations and remote support capabilities. Despite numerous benefits, high-tech solutions present challenges, including high cost, complexity requiring expert setup and ongoing maintenance, risk of technological obsolescence, and user dependency on consistent technical support. Ethical considerations include informed consent, privacy concerns, cultural sensitivity in symbol usage, and equitable access issues due to associated costs.

6.4 Innovative AAC Solutions and AI Applications

Emerging AAC technologies leverage artificial intelligence (AI), significantly advancing communication methods:

- Gesture-Based AAC: Utilises sensors and AI algorithms to interpret physical gestures into textual or verbal communication, assisting users with motor impairments or interpretation difficulties.
- Brain-Computer Interfaces (BCIs): Direct neural imaging enables decoding intended speech into synthesised voice outputs, facilitating communication for users with severe motor restrictions but intact cognitive and linguistic abilities.
- Advanced Predictive Systems: AI-driven prediction tools surpass conventional database systems, offering grammatically correct, contextually appropriate phrases and symbol options, significantly enhancing communication efficiency.

- Cognitive AI and Emotional Synthesis: AI-supported AAC applications, like Avaz, introduce emotional nuance into synthesised speech, enhancing interpersonal communication quality and emotional expressiveness.

AI-enhanced AAC tools offer extensive advantages, including multilingual support, real-time corrections, personalised, predictive content, and adaptive learning. Nevertheless, these innovations also face potential drawbacks, such as misinterpretation due to insufficient emotional and contextual understanding, biases from training datasets, and the need for ongoing manual adaptations. Ethical risks remain pronounced, involving data privacy, informed consent complexities, reliance on extensive personal data, transparency issues, and cultural biases, underscoring the necessity for thorough understanding and sensitive application in judicial contexts.

6.5 Ethical Considerations Across AAC Solutions

Ethical implications permeate all AAC technologies used within judicial settings, emphasising:

- Informed Consent: Ensuring users fully comprehend and consent to AAC communications.
- Privacy: Protecting personal data and sensitive communication content, especially with high-tech and AI-integrated devices.
- Bias and Stereotyping: Preventing biases in interpretation, communication partner influence, or technological design from affecting judicial outcomes.
- Equality and Accessibility: Ensuring equitable access to justice, avoiding discrimination stemming from technological limitations or stigmatisation.
- Adequate Training: Ensuring court personnel have thorough training to interpret AAC communication accurately, understanding co-occurring disabilities and appropriate support strategies.

In summary, AAC technologies empower non-verbal or speech-impaired individuals to participate effectively in judicial processes. The optimal AAC solution depends on individual user needs, available support, context-specific requirements, and ethical considerations. Continued advancements, particularly through AI integration, promise to enhance communication capabilities further, ensuring more effective and inclusive access to justice.

07

INCLUSIVE E-JUSTICE FOR VICTIMS

7.1. Guidelines for ethical and data protection rules-compliant systems for victim's access to justice

The desk research allowed to collect a set of standard and guidelines on data protection, data sharing, ethics, digitalization, online accessibility, security and interoperability that are the basis for the design of the model blue-print. These are the following:

- Strong Customer Authentication (SCA): e-justice working with sensible data should have a strong authentication system that combines several factors in the same process, in order to increase its security level. Access to a secure system is through identification and authentication of the user. When you log in to your account, you enter your username, which allows you to identify yourself. Strong authentication is achieved by combining multiple recognition modals. The possible authentication modes are three and take place through: a) the knowledge of a data, that is "information that the user knows", such as a code or password; b) possession of an instrument, i.e, "a thing the user has", typically a device, for example, a token or app on their smartphone; c) a biometric data, that is "something the user is", for example, fingerprint or facial recognition. Strong authentication uses combination of at least two factors from different categories.

- Privacy protection: the right to protection of personal data is a fundamental right of the individual protected by Regulation (EU) 2016/679 of the European Parliament and of the Council (General Data Protection Regulation – GDPR), of 27 April 2016, on the protection of natural persons with regard to the processing of personal data. The GDPR is the toughest privacy and security law in the world. Though it was drafted and passed by the European Union (EU), it imposes obligations onto organisations anywhere, so long as they target or collect data related to people in the EU. With this regulation, the European Commission aims to strengthen the protection of personal data of citizens of the European Union (EU) and residents of the EU, both inside and outside the EU, giving citizens control of their personal data, simplifying the regulatory environment for international affairs, unifying and homogenising privacy legislation within the EU.

- Client confidentiality: As AI technology continues to advance, providing greater efficiency and the ability to process extensive amounts of data, legal

professionals are increasingly using these devices in support of their work. However, some challenges must be taken into consideration. One area of particular concern is the lawyers' duty to ensure client confidentiality. A lawyer shall not reveal client information protected from disclosure unless the client gives informed consent and must maintain inviolate the confidence, and at every peril to himself or herself to preserve the secrets, of his or her client. Preserving the confidentiality of client information contributes to the trust that is the hallmark of the lawyer-client relationship. Lawyers should never input any confidential client information into any generative AI solution without first ensuring there are adequate confidentiality and security protections. A lawyer should never use confidential client information with an AI product that uses inputted information to train its AI model or to provide responses to queries from other users. Another challenge for lawyers regard the technological knowledge: several AI systems utilize both user prompts and documentation uploaded to its system and integrates and shares third-party documentation and information in its outputs. Because this could result in inadvertent disclosure of client information, recommends that lawyers consult with an IT expert regarding the security, confidentiality, and data retention protocols of an AI product prior to its use.

- **Data protection**: the term "Data Protection" refers to all operations and provisions used for the protection of personal data. In this regard, art. 37 of the GDPR provides that: «the controller and the processor shall designate a data protection officer in any case where: a) the processing is carried out by a public authority or body, except for courts acting in their judicial capacity; b)the core activities of the controller or the processor consist of processing operations which, by virtue of their nature, their scope and/or their purposes, require regular and systematic monitoring of data subjects on a large scale; or c) the core activities of the controller or the processor consist of processing on a large scale of special categories of data pursuant to Article 9 or personal data relating to criminal convictions and offences referred to in Article 10.
- **Data sharing**: data sharing is the process of sharing data resources within and between entities and organizations whilst preserving the data's quality. It enables data to be passed between parties in a way that keeps the data intact so that all recipients receive the same metadata and level of accuracy as the original dataset. Data sharing should be secured from external threats by the

use of several types of technologies as blockchain or encryption methods (see Section 6.2).

- **Ethics**: it is important to observe the ethical principles that have developed in recent years around the use of AI. [84] These include:
    - Transparency: References to transparency comprise efforts to increase explainability, interpretability or other acts of communication and disclosure. To achieve greater transparency, many sources suggest increased disclosure of information by those developing or deploying AI systems. The provision of explanations 'in non-technical terms' or auditable by humans is encouraged.
    - Justice, fairness, and equity: Justice is mainly expressed in terms of fairness, and of prevention, monitoring or mitigation of unwanted bias and discrimination.
    - Non maleficence: AI should never cause foreseeable or unintentional harm (for example, discrimination, violation of privacy, negative impacts on long-term social weel-being, or on psychological, emotional, or economic aspects.
    - Responsibility and accountability: it is worth to clarify the attribution of responsibility and legal liability.
- **Digitalisation**: the process of digitalisation in order to be successful should take into account a set of design principles that support the effectiveness of the new system and the new procedures to be applied:
    - Reuse of existing installed bases: many IS, organizational theory, and e-justice scholars have focused on the design advantages of working with an existing installed base. The term installed base refers to the technological solutions, institutional arrangements, organizational practices, and legal frameworks already in place when a new e-justice

[84] On this topic, have fundamental importance the document "Recommendation on the Ethics of Srtifical Intelligence", adopted by UNSCo on 23 Novembre 2021 ad available at the following link: https://unesdoc.unesco.org/in/documentViewer.xhtml?v=2.1.196&id=p::usmarcdef_0000381137&file=/in/rest/annotationSVC/DownloadWatermarkedAttachment/attach_import_e86c4b5d-5af9-4e15-be60-82f1a09956fd%3F_%3D381137eng.pdf&locale=en&multi=true&ark=/ark:/48223/pf0000381137/PDF/381137eng.pdf#1517_21_EN_SHS_int.indd%3A.8954%3A13

system is developed. Some scholars [85] posit that designers may reduce adoption barriers and safeguard capabilities already in place by basing the implementation stage of an information system on an existing installed base. However, others have noted that relying on an installed base can also produce issues. For example, some installed base components are resistant to change and may hinder the evolution of an e-justice service. A dual character of the installed base can be identified: on the one hand, it constitutes a pool of available resources that can be turned into convertible and usable materials; on the other hand, it can foster inertia and hinder the development of new configurations. The principle of using an already existing installed base assumes great importance in the cases of trans-border systems due to the necessity of not dismissing systems already implemented at the national level. This has been the case for instance of e-Codex case (here analyzed in Section 3. – ICT in Justice: some inputs on projects and implications).

  - Involvement of stakeholders in the development phase: while system design and engineering are obviously important components in e-justice and other IS initiatives, so too are psychological and political/power aspects of technological change. This is particularly important for technological systems that are implemented within organizations. Through this lens, it is essential to take into account interactions between organizations, individuals and technology. It is appropriate to emphasize the advantages of a staged, iterative process that incorporates inclusion and feedback from key stakeholders and expands prospects for stakeholder acceptance of technological change, as well as providing motivational opportunities through the achievement of incremental "wins" along the way. From the viewpoint of organizational psychology, consultation with stakeholders also enhances the prospect of user group acceptance prior to the introduction of technology.

- **Online accessibility and inclusion**: Tools and technologies should be designed and developed so that persons with disabilities can use them. The countries

[85] Ole Hanseth, and Kalle Lyytinen. "Design Theory for Dynamic Complexity in Information Infrastructures: The Case of Building Internet." *Journal of Information Technology* 25 (2010): 1–19.

around the world are addressing digital access issues through legislation. In this view, on 26 October 2016, the European Parliament approved the Web Accessibility Directive, which requires that the websites and mobile apps of public sector bodies be accessible. [86] In 2019, the European Union introduced the European Accessibility Act, as one of the leading pieces of legislation for digital accessibility and digital inclusion. [87] The European Accessibility Act (EAA), which will enter into force on 28 June 2025, requires companies to ensure that the newly marketed products and services covered by the Act are accessible. All websites will need to adhere to the WCAG Principles of Perceivable, Operable, Understandable and Robust, and deliver comparative levels of user experience to disabled customers.

- Cybersecurity: cybersecurity is the art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information. It is important, in this prospective, the Regulation (EU) 2019/881 of the European Parliament and of the Council of 17 April 2019 on ENISA (the European Union Agency for Cybersecurity) and on information and communications technology cybersecurity certification and repealing Regulation (EU) No 526/2013 (Cybersecurity Act), [88] which strengthens the ENISA and establishes a cybersecurity certification framework for products and services.
- Interoperability: interoperability refers to the functionality of information systems to exchange data and to enable sharing of information. In keeping with the main data protection principles, interoperability cannot give rise to the access or use of any data via another information system or give access to more data than is needed.

There is potential for different guidelines to create additional challenges for persons with a disability. Making the accommodations described in Part 1 extremely difficult to deliver. There has been a tension between accessible design and security in the past, and seeking solutions to these issues will be essential to ensure an inclusive system.

[86] The directive is available at: https://digital-strategy.ec.europa.eu/en/policies/web-accessibility
[87] For more information: https://digital-strategy.ec.europa.eu/en/policies/web-accessibility
[88] Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32019R0881

7.2. Proof of concepts: new solutions for victims with disabilities' participation to criminal justice

Diana Project

In this section we will present the blueprint of the Digital Information System for victim support which will have an application through adaptation in the different countries selected for the study. The system design will be based on the practice-oriented guidance and standards for implementation defined and described in the previous section. The system described will have general purpose and general application characteristics, based on the idea of providing a design that is most applicable to different contexts. This is to facilitate an adaptation to selected national contexts, which does not necessarily entail radical changes in the national system of victim protection, in the legislative framework (and potentially in the digital infrastructure): such changes would entail a high level of complexity due to the necessary involvement of actors with legislative power at various levels and, above all, longer development times than those for technological implementation. The adaptation of the system to national case studies will be the responsibility of the partners involved in the case-studies' analysis and will be based, on the one hand, on the integration of the technological system into the national procedures and, on the other hand, on specific choices by partners related to system requirements indicated as optional in this section. We have taken care to indicate on the following pages which system requirements can be varied in order to facilitate a smoother adaptation in national contexts.

The designed system, called Diana, has been envisioned as a **multi-function, multi-role application** for victim data collection, information sharing, procedural accommodation definition, risk assessment, data management, expert system information through an AI chatbot, and for the provision of a secure chat for operators.

The system aims to support, through digitisation, both access to justice and information - procedural and, more generally, legal - for victims, and for the activities of those, starting from the moment of complaint, that have a role in the process of supporting the victim. The system is therefore based on the interconnection of different components that allow the coordinated execution of the different functions of the application. Furthermore, the system was conceived as an element external to the judicial system, compatible with existing procedures and systems (installed base). This, as we will see, is one of the requirements for adapting to different national

contexts. Indeed, the application can be used by various operators, including professionals of the judicial system (police, judiciary, court staff), even in the absence of interoperability with systems (e.g. the CMS within the judicial system) already existing. Furthermore, this allows the implementation of the system even in those contexts where the installed base has a low or insufficient level of development to allow interoperability with complex systems such as Diana.

Having said this, Diana's users will be the following:

- Victims of crime, including children with disabilities, who want to report a crime or receive support:[89]
- Families, persons of trust that are playing supportive role, child's personal assistant
- Victim support Actors:
    - Justice Authorities
        - Police;
        - Prosecutor's office;
        - Lawyers authorised by the victim;
        - Judges;
    - Child Protection Professionals
    - Support Service Professionals
        - Support Services;
        - Anti-violence centers;
        - Healthcare system operators;
        - Psychologists;

The application will be available on various platforms and in particular through a dedicated website and an application on PC, Mac, Android, IOS.

With the aim of supporting the maximum inclusiveness of procedures digitised through Diana, all the app interfaces will be supported by the most utilised solutions

[89] This proof of concept is designed having children with psychosocial and intellectual disabilities, in the 12-17 age range, as the primary target group, but it could serve as a basis for all victims of crime.

for persons with disabilities' accessibility and on the regulations that discipline the topic. We will cover this aspect in the following sections.

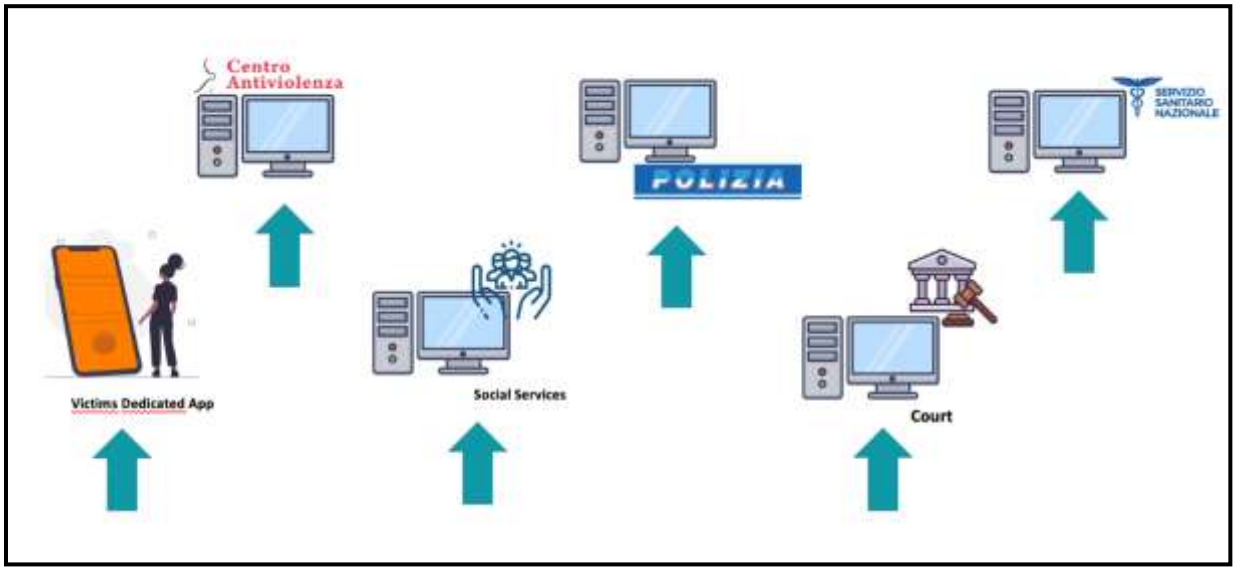
Also based on the security and data protection standards described in the previous section, part of Diana's requirements will concern its cybersecurity. This refers on the one hand to the types of access to the system that will guarantee access only to authorised users. Furthermore, considering the sensitivity of the data processed and stored by the system, we will have different types of access to such sensitive data based on the different roles covered by each user. On the other hand, cyber security concerns the protection of data from external attacks that can modify them illicitly: this will be guaranteed through the most modern blockchain systems and other methods of protection.

This issue will be explored in depth in the following pages.

In summary, the Diana application will provide an access point for victims of crime who require support - both for their safety and to make a complaint - providing them with procedural and, more generally, legal support and information. At the same time, the data stored thanks to the participation of crime victims in digitalised procedures, will be fundamental to support, through digitisation, the most important functions that concern victim support –from the acquisition of their data, to participation in criminal trials– and support services involving various actors such as the police, judiciary and associations.

7.2.1 Diana: Data Gathering

Figura 1 Diana PoAs



Note: Points of Access for Diana data gathering

Diana's fuel will be the data acquired on victims of crime who access the system or come into contact with the different access points. As already mentioned, these data will be the basis for activating the most important functions of the system, from risk assessment to management of individual cases during the various stages of the procedure.

The Diana approach facilitates a sense of safety and security for people with an intellectual disability by allowing them to take as much time as they require to prepare their statement, use a range of assistive technologies to draft it, and do so in a place or location of their choice. This helps to address several of the issues related to access to justice in Part 1.

How is data on victims of crime collected?

Data relating to victims of crime will be acquired through different access points which include on the one hand the possibility for the victim to directly access the system and deposit their data directly on the platform, and, on the other hand, the possibility for the system operators to gather the victim's data and store them in the database.

The access points (AP) will be (Fig. 1):

1. Dedicated application function that a victim can access through registration on the site or app. Following registration, a questionnaire will guide the victim in providing the essential data. These data, in addition to contact information, will also cover a description of the crime suffered and all relevant information for the risk assessment and individual assessment related to procedural accommodations.
2. The actors of the support system and protection for victims of crime (internal or external to the judicial system) will have their access point on web platform or on operating system specific application. When victims of crime come into contact with one of the actors in the system, will be asked to provide their contact details and details of the crime they have suffered, which will then be stored in the application. The idea is that such data can be available to all support operators in order to reduce double filing and the resulting risk of secondary victimisation. As defined in the box "Optional Requirement no. 1", for all actors - and especially for those within the judicial system - there is a possibility that the application Diana is interoperable with the system already in place: in this way, professionals will directly use their own data management system which will automatically populate the data in our application; on the other hand, if it is considered that the implementation of interoperability with the various systems already in place is a highly complex process, the system will still be implementable as a stand-alone application. The operators will use their own system and the Diana application in parallel. Although this may represent a redundant activity, it is still necessary to keep in mind the advantage of using Diana for the acquisition of data at the first access point as these will then be usable by all other operators involved in the protection process and in criminal proceedings.

The data entered may also be modified, depending on the access levels (and therefore the roles of the operator), during the various stages of the procedure. This will allow a constant update of the data and the supply of constantly updated data in real time. The operators' access points that will allow to deposit victim's data are the following:

a. AoP Police;
b. AoP Prosecutor's Office;

c. AoP Support Services;

d. AoP Anti-violence centers;

e. AoP Lawyers authorized by the victim;

f. AoP Healthcare system operators.

g. AoP victim's lawyers;

h. AoP victim's app.

Optional Requirement n. 1

The interoperability with the digital system already in use by various operators is an optional requirement which allows adaptation to the national implementation context. There are three options:

1. Full interoperability with the systems already in use by the various operators: in this case, the app will ensure the automatic transmission to the database of the application Diana of the data stored through the systems already in use. This solution requires long implementation times and is characterized by a high complexity due mainly to the internal technologies of the judicial system, whose modification necessarily also requires a modification of the legislative framework.

2. Partial interoperability with systems already in use by various operators: in this case, the Diana application will be interoperable with the systems of a limited number of operators (potentially those not within the judicial system). The implementation of this type of interoperability is characterized by a complexity and shorter time-to-completion compared to those required for the first option.

3. No interoperability: in this case, the operators will use their own system and the Diana application in parallel.

What data will be acquired?

The data acquired through the different AoPs will be:

- Contact details:
    - First name and surname;
    - Address;
    - ID number;
- Type of crime suffered;
- Health data (for example, tax code, useful for identify the person in the national health system)
- Phase of the proceedings;
- Risk assessment factors:
    - Manner of the offence (time, place, object, nature, species, means used to commit the crime);
    - Motives for crime (for example, crime committed with violence against the person, in a domestic environment, with racial hatred, for the purpose of discrimination, etc.);
    - Criminal record of the offender;
    - Previous complaints filed by the victim.
- Factors related to procedural accommodation assessment
    - Disability
    - Gender
    - Age

The type of data acquired may vary when the blueprint is applied to the national context. This is an additional optional requirement (see box Optional Requirement No. 2).

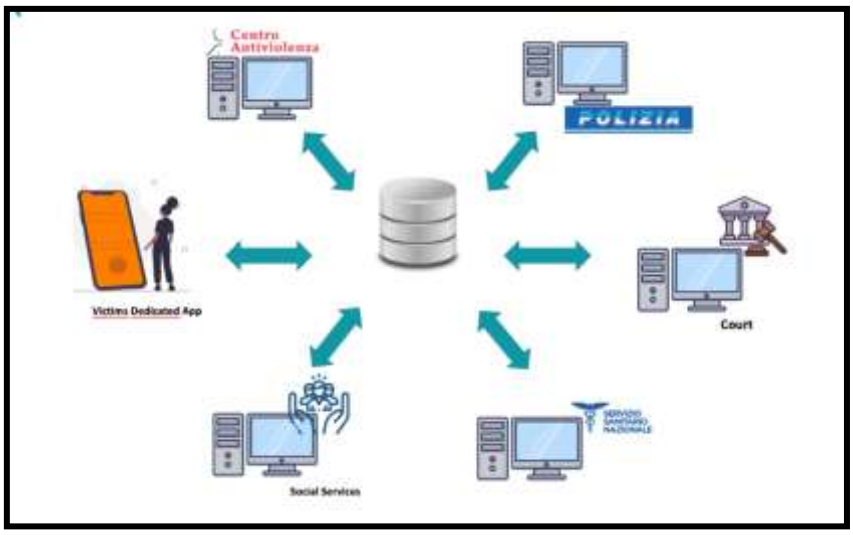
Optional Requirement n. 2

Based on the national legislative framework, a further adaptation may concern the type of data that is acquired through the app. The various categories of data can therefore be supplemented by:

- Contact details
  - Other relevant to the national legislative framework and context?
- Type of crime suffered
  - Other relevant to the national legislative framework and context?
- Health data
  - Other relevant to the national legislative framework and context?
- Risk assessment factors
  - Other relevant to the national legislative framework and context?
- Phase of the proceedings
  - Other relevant to the national legislative framework and context?

7.2.2 Diana: Case Management System

Figure 2 Diana CMS



Note: Connections of the Diana CMS

The data acquired will be accessible in different ways and at different levels by users using the system, including victims. Users (judicial and external actors and victims) will be able to access the above data following their authentication and identification. This widespread access allows the exchange of data useful for the various procedures of support and protection of the victim. The data filed may also include documents in pdf format or other formats (especially for documents related to evidence, which can be added during the different phases of the proceedings to support the judicial system).

The process enables users with disabilities to transform data into a format that suits their needs. Files accessed on the case management system will support users of assistive technology in having the full file read aloud or in creating a summary of the key points they need to be aware of. Those using AAC technologies will be able to use symbols and text phrases to find and retrieve the data they require. By ensuring the accessibility of content that is interoperable with the assistive technology features and functions, those with a range of intellectual needs will have the options they require to give informed consent as described in Part 1.

The data stored will be kept on a central server. The entity or operator that maintains and updates this server may be of a different nature and will be selected by the

country in which Diana will be implemented and applied: this depends on policy decisions, the organization of the system and the legislative framework of the country that will host the blueprint (optional requirement no. 3, see box).

Optional Requirement n. 3

The national-level application may include the body or a list of bodies that have the ability to host and maintain the server that manages Diana's data.

The identification of users and their authentication will be based on a strong authentication system. Indeed, when designing an authentication system for an app that gathers and manages sensitive data, it's crucial to implement a strong, multi-layered approach to ensure robust security. Here's the recommended technologies at the basis of the authentication system:

Multi-Factor Authentication (MFA)

Description: MFA requires users to present two or more verification factors to access the application. This usually includes something the user knows (password), something the user has (a mobile device or security token), and something the user is (biometrics).

Implementation:

Primary Factor: A strong password policy with complexity requirements (e.g., minimum length, special characters).

Secondary Factor (options):

- TOTP (Time-based One-Time Password): Use an authenticator app like Google Authenticator or Authy.
- Hardware Token: Physical devices like YubiKey that generate a unique code.

- Biometrics: Fingerprint or facial recognition (especially useful for mobile devices).

Login credentials may be obtained through different methods based on the user involved.

Here is an example of the different roles.

- Victims of crime
    - Digital and personal identity of the citizen, provided by the Public Administration to use digital services in a personalized and secure way.
- Police
    - Credentials provided by Ministry of the Interior
- Prosecutor's office
    - Credentials provided by Ministry of Justice
- Support services
    - Digital identity of private and public entities, provided by the Public Administration to use digital services in a personalized and secure manner.
- Anti-violence centers
    - Digital identity of private and public entities, provided by the Public Administration to use digital services in a personalized and secure manner.
- Lawyers authorised by the victim
    - Digital identity provided by the bar association
- Healthcare system operators
    - Digital identity of private and public entities, provided by the Public Administration to use digital services in a personalized and secure manner.

Also in this case, there will be an optional requirement that will allow adaptation to the national case study (box 4, optional requirement).

Optional Requirement n. 4

The method of obtaining access credentials based on roles can be established by the individual country analysed, based on the available digital infrastructure.

Roles and methods for obtaining access credentials.

- Victims of crime
- Police
- Prosecutor's office
- Support services
- Anti-violence centres
- Lawyers authorized by the victim
- Healthcare system operators

What data is accessible and to whom?

Access to data, as already mentioned, will depend on the type of role of the user: this is to avoid that sensitive data may have a dissemination not limited to their use for support and protection of victims; also, this strategy aims to limit the risks of re-identification, secondary victimization and repeated victimization.

The following table shows the different types of access in relation to the different roles.

Role	Accessible data	Options for editing data
	• Contact details	• Contact details

Victims of the crime	• Type of crime suffered • Health data • Factors related to Risk Assessment/Procedural accommodation • Phase of the proceedings • Red Flags • Procedural Accommodations needed	• Type of crime suffered * • New crimes • Factors related to Risk Assessment/Procedural accommodation * • File new evidences *
Police	Contact details • Type of crime suffered • Health data • Factors related to Risk Assessment/Procedural accommodation • Phase of the proceedings • Evidences • Red Flags • Procedural Accommodations needed	• Contact details * • Type of crime suffered • New crimes • Health data * • Factors relate to Risk Assessment/Procedural accommodation • File new evidences
Prosecutor's office	• Contact details • Type of crime suffered • Health data • Factors related to Risk Assessment/Procedural accommodation • Phase of the proceedings	• Contact details * • Type of crime suffered • New crimes • Health data * • Factors related to Risk

	• Evidences	Assessment/Procedural accommodation • File new evidences
Support services	• Contact details • Type of crime suffered • Health data • Factors related to Risk Assessment/Procedural accommodation • Phase of the proceedings • Red Flags • Procedural Accommodations needed	• Contact details * • Type of crime suffered * • New crimes * • Health data * • Factors related to Risk Assessment/Procedural accommodation • File new evidences
Anti-violence centers	• Contact details • Type of crime suffered • Health data • Factors related to Risk Assessment/Procedural accommodation • Phase of the proceedings • Red Flags • Procedural Accommodations needed	• Contact details * • Type of crime suffered * • New crimes * • Health data * • Factors related to Risk Assessment/Procedural accommodation • File new evidences
	• Contact details • Type of crime suffered	• Contact details * • Type of crime

Lawyers authorized by the victim	• Health data • Factors related to Risk Assessment/Procedural accommodation • Phase of the proceedings • Evidences • Red Flags • Procedural Accommodations needed	suffered * • New crimes * • Health data * • Factors related to Risk Assessment/Procedural accommodation * • File new evidences *
Healthcare system operators	• Contact details • Health data • Red Flags • Procedural Accommodations needed	• Contact details * • Health data * • Red Flags • Procedural Accommodations needed

Note: Roles of Diana users and their data access capabilities.

* Indicating changes that have to be approved by other roles in order to be definitive.

As defined in the table, different users with different roles will have different possibilities for accessing and editing data. Some changes to the database will need to be approved by other actors, so as to avoid erroneous or unlawful amendments.

7.2.3 Diana: Risk and Procedural Accommodation Assessment – Red Flags

As already mentioned, the stored data will be used by the system for two fundamental functions of the application: on the one hand, the evaluation necessary for the activation of any procedural accommodations; on the other hand, the risk assessment related to recidivism.

The first assessment - concerning the application of procedural accommodations - will be based on the following fundamental factors:

- Gender;
- Age;
- Disability
    - Definition of the type of disability and assistive technologies or AAC required for victim participation in the proceedings
- Social, family and emotional background of the victim;
- Context in which the victim has suffered the crime (domestic, family, work, etc.).

Based on these factors, the system will suggest the type of procedural accommodation to be applied in the various stages of the procedure. These factors are also an additional optional requirement (see optional requirement box no. 5): national specific factors may be included in the system when the blue print is adapted to the national procedure.

By combining a description of functional impairments rather than a diagnosis, the assessment process can be more carefully tailored to the individual needs of users.

As suggested in Part 1, such assessments must reflect the specific needs and barriers experienced rather than assuming that anyone with a specific diagnosis faces the same challenges.

Optional Requirement n. 5

This optional requirement concerns the factors that influence the assessment of the application of procedural accommodation. In this respect, additional national specific factors may be included when the blueprint is adapted to the national procedure.

The risk assessment will be based on an analysis of the statistical data stored in the system, using artificial intelligence. Data stored in the server indeed after automatic anonimization will be utilized by the system.

The system will bring to light specific patterns and significant relationships between risk factors and events of victimization, as well as repeated or secondary victimization. Based on such analyses applied to individual cases, it will be possible to assess the level of risk to which the victim is exposed. The activation of protective measures will depend on this assessment.

This assessment will be based on a number of key factors:

- Type of crime;
- Manner of the offence (time, place, object, nature, species, means used to commit the crime);
- Motives for crime (for example, crime committed with violence against the person, in a domestic environment, with racial hatred, for the purpose of discrimination, etc.);

- Criminal record of the offender;
- Previous complaints filed by the victim;
- Type of disability and its manifestation (sensory, intellectual or psychosocial disability, etc.);
- Type of relationship between the offender and the victim (e.g., marriage, cohabitation, kinship, partnership, neighbourhood, professional relations, etc.);
- Family, social, professional and emotional background of the offender and the victim.

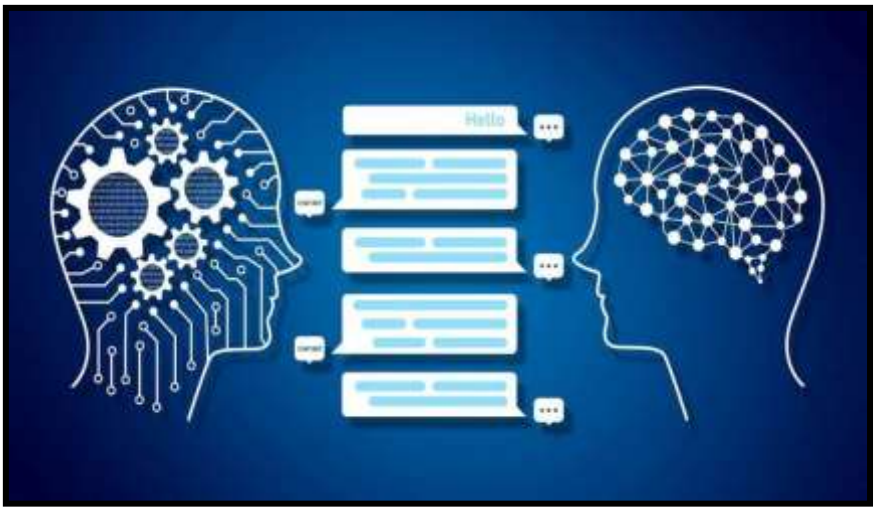
Both the factors contributing to the risk assessment and the protective measures envisaged and suggested by the system are an optional requirement to be adapted to the national system (see optional requirement box no. 6).

Optional Requirement n. 6

This optional requirement can be modified on the basis of national specific characteristics and it concerns:

- The factors affecting risk assessment;
- The protection measures for vulnerable victims.

7.2.3 Diana: Expert System and ChatBot



The application will provide access to simplified legal information on its various platforms. The information will generally cover the existing rules on victim protection and support and related procedures. In particular, the information available will cover:

- The procedure for filing a complaint or participate in a proceeding;
- Procedural accommodations available;
- Protection services available;
- Support services.

Other categories of information may be included as a result of its application in the national contexts selected for the case-study (see optional requirement box no. 7).

All the information will be provided in a conversational manner through an AI based chatbot. This in order to support a high level of inclusivity. The chatbot will be based on Large Language Technology (LLM). Moreover, the expert system will be based on official and verified sources of information as laws (substantive and procedural).

This approach will facilitate the active involvement of those with learning disabilities, as identified in Part 1. Such engagement will allow the user to have a clear view of the support service they require rather than being considered unable to make a decision and having an advocate allocated to them. The system assumes the person with a disability has the competency to make a choice and give informed consent.

Through a geolocalisation function, the application will provide information on the closest support service, also after completion of procedure.

On the basis of the data acquired also from sources internal at the justice system, some information provided will regard the phase of the criminal proceeding or the date of the next hearing or audition.

Optional Requirement n. 7

This optional requirement concerns the categories of information that may be added to those provided by the expert system when it is applied to the national context.

7.2.4 Diana: Internal Encrypted Secure Chat

To facilitate coordination between actors using Diana, the application will include the implementation of an internal chat. This will allow the exchange of communications in "two-on-one" or group chat.

This feature may support an effective and traceable professional collaboration among practitioners. Additionally, the chat will allow coordination and information between operators, thus also providing the possibility for supervisors to screen communications and assess whether all procedures have been correctly followed and whether victims have received appropriate protections, especially from secondary and repeated victimisation. Communications will be secured through an encryption method based on end-to-end encryption technology. This method ensures that data is encrypted from the moment it leaves the user's device until it is received and decrypted by the server. This protects sensitive data during transmission. The system will utilise TLS (Transport Layer Security) to encrypt data in transit and "encryption at Rest", thus storing sensitive data in an encrypted format on the server using strong encryption algorithms like AES-256.

Such an approach reduces the risk of misunderstanding for persons with disabilities and provides a high level of protection against any risks they may encounter. Such an approach helps to ensure that the individual has a sense of safety and security

throughout the process. Especially when the accused is well known to the victim, as described in Part 1.

7.2.5 Diana Inclusivity: Assistive technologies integrated to the system

With the aim of encouraging participation and inclusion of all categories of users in the Diana system, the application will be equipped with different assistive technologies and inclusion methods.

Regarding the inclusion of children and victims with a lack of knowledge of legal terms, information provided through the application will be simplified and based on the use of accessible language.

As regards disability, the aim of the system-integrated or system-compatible assistive technologies will be to allow access and use of the system also for users with different types of disabilities.

The following is a non-exhaustive list of assistive technologies supporting different types of disabilities that will be compatible or integrated with Diana and address the need for forms of accommodations described in Part 1.

Vision Impairment

Diana users may experience difficulties due to a wide spectrum of vision impairments.

In order to support their inclusion and participation, the application will be integrated with a speech to text technology that will convert automatically in speech all the text appearing in the application.

Physical Impairment

Some physical impairment may affect the person's ability to write, access and sign documents and other items presented digitally. Diana will support the integration with technologies as word prediction software that can assist individuals with physical disabilities as for instance by reducing the keystrokes required to type. This is particularly helpful for individuals with limited dexterity or strength. Many modern computers, tablets, and smartphones include built-in word prediction features.

Diana can also be integrated or compatible with speech recognition technology, which allows users to control their computer and input text using their voice. This technology can assist individuals who find it challenging to use a standard keyboard and mouse.

Learning/Intellectual Impairment

Diana can be integrated or compatible with AT that support learning/intellectual impairments that may affect users' ability to understand information provided, communicate effectively, and remember critical information. The application may support the integration or compatibility with speech synthesis and communication app supporting symbol grids and Picture Exchange Communication System. Speech synthesis will include the use of symbols and pictures alongside text provided by Diana. This can help users with intellectual disabilities to understand legal documents and communications more easily. Diana will utilise an API to access the Link project Symbols sets on the Global Symbols website.

Additionally, Diana will include visual reminders tools, like alarms with icons or apps that use pictures to signal tasks, that help users to stay on track with dates or appointments (as auditions or hearings). Visual reminder tools will incorporate also memory aids that may help users remember important information and can assist individuals in recalling details about their case, the sequence of events, or instructions provided by the application.

The integration with Text-to-Speech and Speech Recognition tools already mentioned can be also useful for the inclusion of people with learning/intellectual impairments since they may aid comprehension for those struggling with reading or support the input of a text to a computer.

7.2.6 Diana Cybersecurity

The sensitivity of the data processed by the application requires a special attention to the security of the technology used. This concerns on the one hand, data stored in the case management system and, on the other hand, information exchange and document flow. Both functions, in fact, can be exposed to illegal attacks from the outside or unauthorized access, putting at risk the users of the application and their data.

In light of the stigma and discrimination described in Part 1 that many young persons with disabilities face in their daily lives, the assurance that their data is secure and

private to those with appropriate authorisation is critical to facilitating access to justice for persons with disabilities .

For the CMS, the stored data will be made secure by applying blockchain technology.

Blockchain technology may enhance database security by providing a decentralized, transparent, and tamper-resistant framework for storing and managing data.

The blockchain features improving security applied to Diana are:

- Decentralisation: Decentralization regards the distributed Ledger. Instead of storing data on a single server or centralized database, blockchain technology distributes data across multiple nodes (computers) in a network. Each node has a copy of the entire blockchain, reducing the risk of a single point of failure.
- Immutability: Immutability refers to the tamper-resistant feature of block-chain, because once data is recorded on the blockchain, it becomes extremely difficult to alter. Each block of data is linked to the previous one through cryptographic hashes, creating a chain of blocks. If someone tries to change any data in a block, it will invalidate the hashes of subsequent blocks, alerting the network to the tampering.
- Transparency and traceability: Transparency and traceability is ensured by the open ledger. In many blockchain systems, the ledger is public, meaning that anyone can view the recorded transactions. This transparency can deter fraud and enhance trust in the system. Even in private blockchains, where access is restricted, the traceability of transactions is maintained among authorized participants.
- Access control: access control will be guaranteed through permissioned blockchain. In a permissioned blockchain, access to the network is restricted to authorized users. This ensures that only trusted parties can participate in the data management process, reducing the risk of unauthorized access.

As regards document flow, including chat and data exchange, in order to ensure a secure and reliable exchange of documents, Diana will involve a combination of technologies designed to protect integrity, confidentiality, authenticity, and availability of exchanges.

The following technologies will be integrated:

- **Data encryption** (see section 1.2.4).
- **Secure File Transfer Protocols** that establish an encrypted link between a web server and a browser, ensuring that all data passed between them remains private.
- **Content Filtering** that monitors and control the transfer of sensitive documents based on pre-defined policies, ensuring that sensitive data is not accidentally or maliciously shared.
- **Endpoint Protection** that can be deployed on endpoints (e.g., computers, mobile devices) to monitor and control document exchange activities, preventing data breaches.
- **Virtual Private Networks (VPNs)** that can create a secure tunnel between the user's device and the internet, ensuring that all data, including documents, is encrypted during transmission, even over unsecured networks.

08

CONCLUSIONS AND RECOMMENDATIONS – PART 2

The analysis carried out has highlighted the importance and massive application of ICT and AI technologies in the justice sector. Aware of the contribution that these new technologies can make in terms of greater efficiency, effectiveness, accessibility and timeliness of the judicial system, the administrations of various European countries have equipped themselves of technological systems increasingly at the forefront: from the simplest (the c.d. "basic technologies", such as computer, word processing, spreadsheets, and e-mail) to the most advanced, such as legal databases, automatic registers and case management systems, introducing new functionalities, such as allocation of cases, templates for documents preparation, electronic filing of legal documents, access to case information, statistics.

The pandemic emergency from Covid-19 and the restrictive measures of isolation adopted in many national to counter it have, then, accelerated the process of digitization of justice, both civil and criminal. This has prompted the introduction of new technological tools, aimed at reducing the slowness of judicial processes and encouraging citizens' access to procedural information in electronic form. These include, in the civil sphere, the European e-Justice portal and The European Online Dispute Resolution platform and, in the criminal justice field, the European Investigation Order, the Mutual Legal Assistance and the European Arrest Warrant functions through e-CODEX.

The digitisation process has reached a stage where new technological tools based on artificial intelligence can also be introduced in the judicial sphere. Our analysis focused mainly on the impact of these new technologies in criminal proceedings, in which the victim is most often required to participate (filing a complaint, being heard by magistrates or police officers, etc.). In this perspective, we have analysed the tools of predictive justice, the risk assessment tools, the AI-based applications to protect victims of gender violence and, more generally, the uses of artificial intelligence in criminal justice (for example, face recognition, chatbots, etc.). Our analysis has highlighted the strengths but also the weaknesses of these instruments: while they are designed to ensure greater efficiency, fairness, reliability and impartiality of judicial systems, they also pose numerous challenges in terms of privacy protection, risk of misuse or misuse of acquired data and the need for changes in work routine and organisational contexts where they are applied. The ethical issues associated with the use of these systems in a very sensitive area such as the judicial sector should not be underestimated: AI tools, equipped with “learning capabilities”, pose

the risk of discriminatory decisions with a “semblance of objectivity” capable of having an impact - both negative and dramatic - on the lives of citizens and their fundamental rights. For this reason, our analysis has been extended to the principles developed in the CEPEJ European Ethical Charter on the use of artificial intelligence (AI) in judicial systems and their environment.

Moreover, in order to acquire information and data on the use of AT and AAC technologies that can be integrated in the model to be designed as an objective of this project stage, we described the mentioned technologies focusing on the most used, innovative and frontier technologies.

Finally, based on the study conducted and the results obtained, we have elaborated "DIANA", the blue - print of the Digital Information System for victim assistance that will have an application in the different countries selected for the study. This system - accessible to victims and other users working for their protection (police, prosecutor’s office, support services, anti-violence centers, lawyers authorized by the victim and healthcare system operators) – has been envisioned as a multi-function, multi-role application for victim data collection, procedural accommodation definition, risk assessment, data management, expert system information through an AI chatbot, and for the provision of a secure chat for operators.

CONCLUSION OF THE MODEL

The Model Multidisciplinary Cooperation System (MMCS), developed under the LINK Project, presents an innovative and practical framework to advance access to justice for children with intellectual and psycho-social disabilities. Grounded in legal obligations, ethical safeguards, and digital innovation, the MMCS promotes a child-centred, rights-based approach that strengthens procedural fairness and inclusivity within the criminal justice system.

By combining structured individual assessments with a secure Digital Information System, the MMCS ensures that the specific needs and vulnerabilities of each child are recognised and accommodated throughout the legal process. The blueprint is informed by extensive stakeholder input, legal analysis, and pilot testing, and is designed to be adaptable across national contexts.

The development of the “Diana” platform exemplifies how technology can be ethically harnessed to support multi-agency cooperation, accessibility, and informed decision-making. It reflects the project’s commitment to aligning digital tools with the lived realities of children with disabilities and those who support them.

Moving forward, the MMCS provides a scalable model that can be tailored at the national level. Its successful implementation depends on continued investment in training, inter-agency coordination, and the careful integration of assistive and AI-driven technologies. Investment in more advanced technological equipment is also essential: even today, many judicial offices in Europe lack digital tools and carry out their main functions using paper-based systems. The implementation of the model on a national scale necessarily requires the digitalization of judicial procedures. Indeed, this is an objective that can no longer be postponed, the achievement of which will undoubtedly bring benefits in terms of better and more efficient access to justice for victims, especially those characterized by one or more factors of vulnerability.

By bridging justice and care systems, the MMCS reinforces the core message of the LINK Project: that every child—regardless of ability—has the right to participate in justice processes with dignity, support, and safety.

ANNEXES

Annex 1: Assistive technologies

Assistive Technology takes many forms. It can include traditional forms of AT, such as wheelchairs, mobility aids, spectacles, and Digital Assistive Technologies (DAT). In most cases, it is not the justice system's role to provide the required specialist traditional AT. Instead, it ensures that the environment is receptive to such devices and aids. This may include consideration of the width of doors, the routes through a building, signage, acoustics, etc. Those involved in the justice system should be aware of the range of aids that a person with a disability can use within the building and that no unnecessary barriers are created that prevent access.

In some cases, there may be a need to provide some forms of AT. For example, if a blind person requires a laptop with a screen reader and is not allowed to use their device, the court and justice system should provide a computer that can be used within the building and is configured for the individual to use.

This section describes some common ways in which assistive technology addresses individual needs. For each category, we describe the range of solutions available and then consider aspects of innovation for the future.

1. Vision

Young people using the court and justice system may experience difficulties due to a wide spectrum of vision impairments. While some individuals may benefit from prescription glasses, others require a combination of supports to access court documents, objects and displays. People with vision impairments may also be disadvantaged if they cannot interpret body language or facial expressions. While AT may provide solutions to some of these areas of difficulty, it is important to involve the young person to determine what difficulties exist and what accommodations best fit their needs.

Tactile

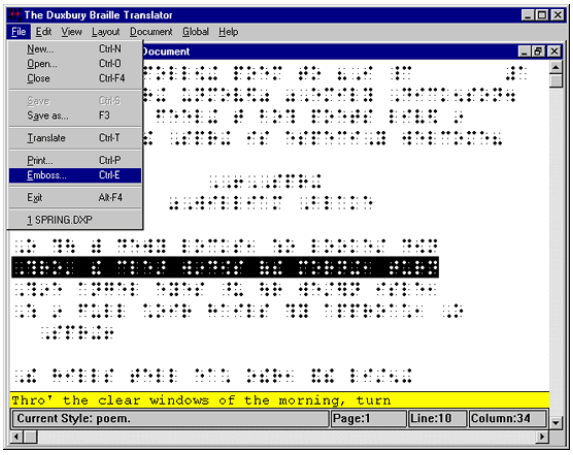
Braille

store.humanware.com

Braille is a long-standing tactile system that enables vision-impaired people to read documents using touch. Court documents can be translated into Braille, printed (low-tech), or displayed on refreshable Braille displays (high-tech).

Court documents can be translated into Braille, but it is important to know that only 10% of European children and young people with vision impairment are proficient in Braille. The majority of younger people benefit instead from the audio systems described below.

shop.rnib.org.uk



www.duxburysystems.com

Braille can be manually typed using a Perkins Brailler directly onto compatible paper. You need to be familiar with Braille to create materials using a Perkins Brailler.

Typing documents into a mainstream word processor and translating them using software such as Duxbury Braille Translator is more efficient and convenient. This can then be printed using a Braille embosser.

Tactile Graphics

Maps, images, diagrams and graphs can be difficult to present using audio. These instead can be converted into tactile formats that can be read through touch.

piaf-tactile.com

A diagram drawn with a heavy black pen or printed from most laser printers can be made tactile using a thermoforming machine. These are made using a combination of specialist swell paper and the machine that heats the paper and expands the dark areas. This works with simple black-and-white diagrams, where the black areas expand and can be felt in contrast to the white background.

viewplus.com/product/vp-elite/

Some Braille embossers can print diagrams as well as Braille. Graphics can be created using popular word processors or graphics software. The specialist printer software will convert these to be printed in tactile format, but be aware that simple black-and-white diagrams will work best.

Audio

Many people with vision impairments can use speech and other audio forms to help them access the justice system.

It is vital to be aware that a young person with a vision impairment may not be able to see gestures, body language or facial expressions. It may also be the case that objects, such as evidence, can't be explored through touch. Consider how speech can be used to describe these important elements in these circumstances.

Many young people with vision impairment use high-tech document and screen-readers to access text. Documents can be automatically converted to speech using tools such as an electronic reader, screen reader or other software that includes voice output functionality. Some software can save the audio from a document into a format that can be played back on a smartphone or other device.

Magnification

shop.rnib.org.uk

Individuals with vision impairments can use magnifying glasses or handheld magnifiers to enlarge text and images on paper documents. These tools are simple to use and require no power, making them a practical option in courtrooms and legal settings. Additionally, printed materials can be produced in large print formats to assist those with partial vision.

Magnifying lamps provide both extra light and magnification.

store.humanware.com

Electronic magnifiers offer more advanced options for magnification. These devices allow users to adjust the magnification level, contrast, brightness and colour scheme to suit their needs. Portable versions can be used in courtrooms to read documents or view evidence. Additionally, digital documents can be zoomed in on computers or tablets, allowing for easier text reading and examination of images. Some electronic magnifiers will also read the text found in a paper document.

Colours, contrast and print

Printed materials can be produced with high-contrast colour schemes (e.g., black text on a yellow background) to improve readability for individuals with vision impairments. Large print materials should use simple, sans-serif fonts and adequate spacing between lines to enhance legibility. Physical adjustments, such as using bold or highlighted text, can make documents easier to read.

2. Hearing

Communication

For Deaf individuals or those with hearing difficulties, clear and effective communication is essential. Basic measures include ensuring that everyone involved in the court proceedings speaks clearly and at a moderate pace. It's important to face the person directly when speaking to allow for lip-reading and the support that facial expressions offer in understanding meaning. Additionally, written communication can be used for simple exchanges, and sign language interpreters should be available when required. Written transcripts of proceedings should be made available where possible, allowing for easier review and comprehension.

apple.com

In situations where some residual hearing is present, assistive listening devices like hearing loops or FM systems can be used. These devices amplify sound directly to the individual, making it easier to hear in environments with background noise or where speakers are at a distance. Some smartphones are beginning to offer these features when used with compatible earphones.

Advanced communication tools include real-time captioning (CART - Communication Access Real-time Translation) services, where spoken words are instantly converted into text displayed on a screen. Video Relay Services (VRS) can be used for remote communication, where sign language users communicate with hearing individuals

through an interpreter via video calls. Some apps convert speech to text in real-time, which can be used on smartphones or tablets. It is important to check these for accuracy.

3. Physical

Young people with physical disabilities will be affected when using the courts and justice system. These disabilities may affect their access to buildings and the facilities present. They may also affect the person's ability to write, access and sign documents and other items presented digitally.

Environment

Ensuring physical accessibility in courtrooms and related buildings is crucial. This includes installing ramps, handrails, and wide doorways to accommodate wheelchairs and other mobility aids. Accessible restrooms and seating arrangements allowing easy manoeuvring and comfortable participation are also essential. Signage should be clear and positioned at a height easily visible from a seated position.

Computer access

Individuals with physical disabilities can sometimes access a computer using a standard keyboard and mouse, often combined with fine-tuned configuration through accessibility options. Some individuals may benefit from specialist hardware to access their computers. If unfamiliar with this equipment, they will need training and experience beforehand during low-pressure activities. Examples of alternative computer access include:

Word Prediction

Word prediction software can assist individuals with physical disabilities by reducing the keystrokes required to type. This is especially useful for those with limited dexterity or strength. Many modern word computers, tablets and smartphones have built-in word prediction features.

bltt.org

Keyguards

Keyguards are physical overlays for keyboards that help prevent accidental key presses by providing a barrier between keys. This is useful for individuals with tremors or limited fine motor control.

Adaptive Keyboards and Mice

inclusive.co.uk

Adaptive keyboards and mice are designed to accommodate various physical disabilities. These include ergonomic keyboards, one-handed keyboards, trackballs, and joysticks, which require less fine motor control than a standard mouse. Customisable key mapping and sensitivity adjustments can tailor these devices to the user's abilities.

Speech Recognition

Speech recognition software allows users to control their computer and input text using their voice. This technology can benefit individuals with difficulty using a standard keyboard and mouse. Software like Dragon NaturallySpeaking and built-in solutions like Windows Speech Recognition or Apple's Dictation feature allow users to perform a wide range of tasks hands-free. It is important to check the results for accuracy.

Head Tracking

Head tracking technology uses a camera to follow the movement of a user's head, translating it into cursor movement on the screen. This allows for hands-free

computer control and is useful for individuals who cannot use a traditional mouse. Some systems also include clicking or dragging using facial gestures or blinking.

Switch Access

ablenetinc.com

Switch access enables users to control their computer using simple on/off switches. These switches can be activated using different body parts, such as the head, feet, or breath (sip-and-puff systems).

www.tobiidynavox.com

Eye Gaze

Eye gaze trackers emulate mouse movements by following eye movements. This allows some people with highly restricted or uncontrollable movements to access a computer.

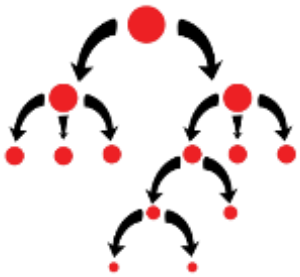
4. Learning/Intellectual

Young people with intellectual disabilities may face significant challenges when navigating the court and justice system. These challenges can affect their ability to understand legal proceedings, communicate effectively, and remember critical information. Providing the right environment and tools is crucial to support their participation.

Environment

Creating an accessible environment for individuals with intellectual disabilities involves simplifying complex information, using clear and straightforward language, and ensuring all communication is paced appropriately. Courtrooms should be

equipped with visual aids, quiet spaces, and support staff trained to assist individuals with cognitive challenges.



arasaac.org

Printed mind maps

Mind mapping tools help individuals organise information visually, making understanding complex ideas and connections easier. This can be particularly useful during court preparations or when explaining legal concepts.

arasaac.org

Symbols and Pictures

Using symbols and pictures alongside text can help young people with intellectual disabilities understand legal documents and communications more easily. Court materials can be adapted with visual supports to enhance comprehension.

Visual Reminders

Visual reminder tools, like alarms with icons or apps that use pictures to signal tasks, can help young people stay on track with court dates, appointments, and deadlines.

Text-to-Speech

Text-to-speech software reads digital text aloud, aiding comprehension for those struggling with reading. This is useful for reviewing court documents or understanding legal terms.

Speech Recognition

Some people find it easier to use the speech recognition tools to input text to a computer. This is because it does not rely on spelling or understanding of written grammar. It is important to check the results for accuracy.

Memory Aids

Digital memory aids, such as apps that store and remind users of important information, can help individuals recall details about their case, the sequence of events, or instructions given by the court.

Annex 2: Augmentative and Alternative Communication

Augmentative and Communication (AAC) describes a set of tools and techniques that allow a person to communicate when speaking is impossible. Lack of speech may arise for many reasons. In many cases, it is a lifelong impairment. However, in a smaller number of cases, it may be because of a temporary condition, such as being intubated or needing to wear an oxygen mask to aid breathing. Additional communication support was identified as an essential need during the Covid-19 pandemic when many people could not communicate easily while in the hospital.

However, in most cases, the child needing AAC will likely have a longer-term condition impacting their communication capacity. These may include some people with Autism, those with Cerebral Palsy and others with conditions that have arisen from trauma such as head injury or oxygen starvation.

In most cases, the AAC tools and techniques are not related to a specific diagnosis or cause of communication impairment. Instead, they are related to a child's level of functioning in language, physical skills, vision, hearing and cognitive processes.

As a result, it is usual for the child to arrive in the legal system with an AAC system already in place. However, such a system may need to be customised and configured to be effective because of the necessary vocabulary, the setting in which communication is taking place, the questions and tasks that need to be completed, and the people with whom they need to communicate. Often, individuals have a mixture of ways to communicate, including both high-tech devices and low-tech solutions. Agreeing which of these is most appropriate is important before engaging in legal processes.

You should not think of AAC systems as being part of a hierarchy. All the tools and techniques are fundamental for supporting victims' access to justice. You should note that AAC user preferences must prevail, and a combination of technologies may be used in certain settings. Equally, AAC technologies for aided communication are usually used alongside unaided communication (such as gestures, signing and vocalisations).

1. Low Tech Solutions

Single Communication cards or simple boards

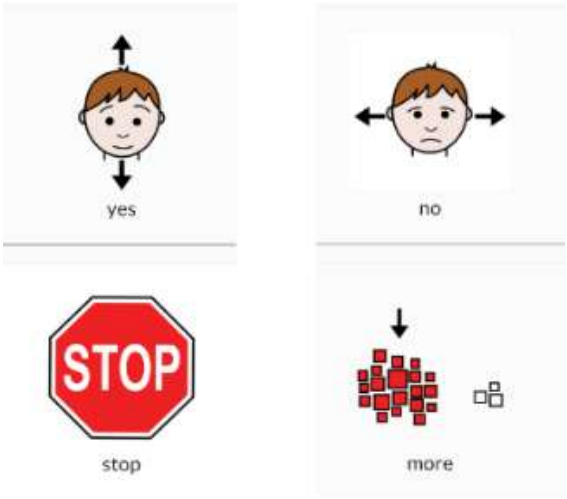
Introductory description

These can have a single photograph, picture or symbol representing a concept. They may illustrate an object, person, particular environment, or feeling.

Purpose

The cards can be pointed to and used to elicit a reaction, and they can be used in a question-and-answer situation where there is a choice of answers, and the chosen symbol shows understanding.

Communication chart or board with several images



Introductory description

These charts can have photographs, pictures or symbols representing several concepts on one page that may be used to discuss the objects, people, particular environments or feelings shown.

Purpose

More symbols can be used to create a phrase or sentence, be part of a non-verbal conversation and support understanding. User pointing or supported communication may be needed where a communication partner points and the AAC user responds.

The Picture Exchange Communication System® (PECS®)

Introductory description

Initially, the AAC user is encouraged to use symbols or pictures to show a need or want with a positive reaction from the communication partner to encourage the communication process.

Purpose

The idea is tried on more occasions in different settings, then with an interchange of more symbols until the communication process is understood. Progressing to making phrases and sentences

Communication Books

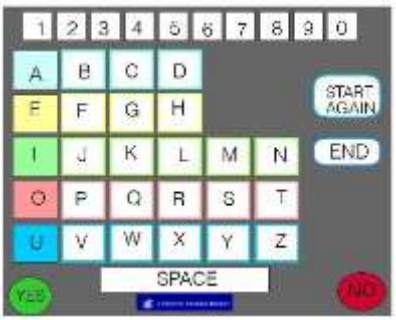
Introductory description

These books have several pages of symbols but may include personal photographs or images of particular people. They are generally designed with each page presenting a series of symbols on various topics and parts of speech.

Purpose

They can be used for non-verbal dialogue with communication partners, saying the symbols as they are pointed to. The symbols may be presented in a specific way. For instance, some users prefer prominently displaying their most commonly used words.

Alphabet Boards



Introductory description

These boards are used when the user has some literacy skills, can spell words, and can even create phrases and sentences that can be said or written down by the communication partner.

Purpose

They are designed for users with a degree of literacy skills and can indicate the letters with their eyes, possibly with an eye-link transparent frame or by gestures such as pointing to a board.

E-Tran board (Eye transfer)

Introductory description

The E-Tran board or frame is usually made of transparent plastic with symbols or words stuck on that can be seen by both the user and the communication partner.

Purpose

The AAC user's eyes indicate the symbol, letter or words they wish to use and the communication partner says or writes them down. Different quadrants may have colours with blocks of letters, words or other symbols.

Visual Scene Displays

Introductory description

These visual scenes are made up of images or photographs that represent particular settings or situations. These may be places, experiences, or people that provide context to an action or scene - a visual description of something happening that is hard to explain in a single symbol or several.
https://cehs.unl.edu/documents/secd/aac/vsr/ASHA_VSDTrain.pdf

Purpose

The image can be used with single communication cards or symbols to explain situations or allow for a conversation around a scene. These scenes are useful where literacy skills are weak, and symbols above or below text cannot help build the context of a situation.

Talking Mats

Introductory description

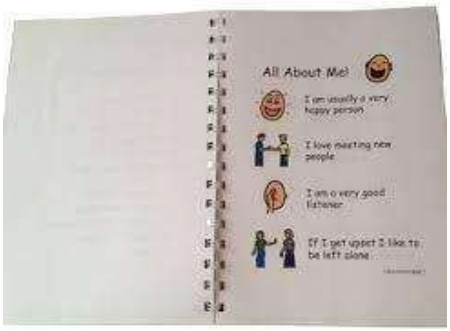
"Talking Mats™ is a communication tool which enables individuals to express their views with the support of symbols. Symbols are organised on a display under headings to support individuals in expressing their opinions, indicating choices and preferences, or establishing their understanding of a situation.

https://www.barnsleyhospital.nhs.uk/assistive-technology/files/2021/05/Paperbased_AAC_Guide.pdf CC-BY-SA

Purpose

This is a particular way of laying out a conversation using AAC symbols as single cards, which may help with decision-making and allow for independent views to be expressed where concepts may be complex and require a method of breaking down abstract ideas.

Communication Passport



Introductory description

A document that provides information about the AAC user and how they communicate is useful for initial meetings.

Purpose

A Communication passport may be presented to court officials to introduce the AAC user's needs. It is a useful way of discovering more about the individual's preferences regarding their known name, next of kin, communication needs, and other daily living requirements.

Flip and Communicate wristbands and other wearable symbol systems.

Introductory description

This is one of several types of portable or wearable symbol communication systems. This one is worn around the wrist, but these symbol flip systems may be on key chains or as mini books often used alongside electronic technologies.

Purpose

Symbols or images fit into transparent pockets, allowing for non-verbal communication at any time and in most situations where electronic AAC technologies are impossible.

1.1 Type of users

Most AAC users who have learned a range of symbols can use these paper-based communication systems unless severe visual difficulties exist. However, some users may require support where co-occurring challenges exist, such as severe physical, sensory, and cognitive issues, to manually manipulate cards and charts or learn new symbol referents.

1.2 Advantages

The advantages of these low-tech solutions include:

- Visual support where simple images can be provided
- Simplicity - no complex technology involved
- Customisation / Personalisation
- Accessibility and flexibility of use - anywhere, anytime
- Easy access to vocabulary for concrete concepts that are readily available in the symbol card set
- Suitable for rehearsing specific situations with learnt symbols.
- Ease of navigation between cards or charts when laid out for responses
- Reducing anxiety when access has to be immediate with a small collection of symbols
- Initiating communication and answering requests, making a finite number of choices possible.

1.3 Disadvantages

There are several disadvantages to consider with these low-tech solutions:

- Challenges expressing complex or specific ideas due to the constraints of a single symbol or groups of symbols. It is hard to handle a large vocabulary.
- Contextual ambiguity is where a single symbol card might not provide enough information, leading to misunderstandings.
- Difficulty in expressing abstract concepts
- Lack of ability to express more complex phrases/sentences
- Limited independence, possibly relying on external support, may impact the user's autonomy.
- It is less efficient for rapid communication, whereas more advanced AAC systems offer dynamic displays or predictive choices.

- It is hard to communicate about specific people or locations if identifying symbol cards are unavailable.

1.4 Ethical risks

Even with the use of low-tech solutions, some ethical risks are to be considered:

- Misinterpretation of symbols - legal professionals require adequate training and understanding to reduce misunderstandings.
- Single AAC symbol cards may offer limited expression of legal concepts - additional methods of communication will be needed.
- Ensuring Informed Consent - There will always be a need to ensure that AAC users fully understand the implications of what is expressed.
- Protocols are needed to ensure privacy and any concerns about respect for the AAC user.
- Fair legal representation allowing the use of communication partner support and AAC system preferences.
- Make sure potential bias and stereotyping are avoided with considerations for equality, diversity, and inclusion.
- Ensuring adequate preparation is made so that court personnel understand the use of AAC systems, co-occurring disabilities, and support strategies may be used.

2. Mid-Tech Solutions

Single message (Little Mack Switch)

Introductory description

These are small battery-operated devices with easy access for those with dexterity difficulties. Each has one button to press that may have a symbol or text under a clear plastic top and produce a verbal response.

Purpose

A single message can be pre-recorded and activated by a button press, which has the potential to provide a speedy vocal response to a closed question, e.g. Yes or No.

Big Button with Steps and Levels

Introductory description

Similar to a single-button message device. In this case, the device speaks the next recorded message in a sequence each time the user presses the switch.

Purpose

This version of press to hear a voice can deliver instructions with different symbols slotted into the frame for each message. More complex messages can be saved as pre-recorded responses to questions.

Talking Photo Album

Introductory description

A 20-page pocket folder for images, photographs or text. A message can be recorded for each page with a play button at the bottom.

Purpose

This symbol or photo album can provide a similar purpose to the communication passport or introduce more complex concepts that link to the AAC's life journey, next of kin, carers and communication partners. It allows for any images related to the judicial case in preparation for a court appearance. It offers the user the chance to use pre-recorded messages with the help of a communication partner or recorded from their high-tech communication aid if that is not available.

Limited number of messages (Go-Talk 4+)

Introductory description

Small battery-operated devices with a limited number of cells or buttons that take pre-made templates of symbols or text labels with pre-recorded messages.

Purpose

These are easy-to-use devices that allow for limited forms of communication with verbal output based on the press of a single symbol at one time that can then be used with another to say another word or phrase.

Multiple pre-recorded messages (Go-Talk 32+)

Introductory description

The Go-Talk 32 has more buttons with keyguards around each cell to aid access where dexterity is an issue. Five recording levels allow up to 160 messages, each with 10 seconds of recording capacity.

Purpose

This device allows for 26 minutes of messages that can only be changed by recording new messages whilst manually changing the symbols seen by the AAC user. However, a limited number of pre-prepared messages can be recorded, and symbol templates can be made up in advance for speedy access.

2.1 Type of users

Most AAC users who have learnt a range of symbols can use these communication systems unless severe visual difficulties exist. The buttons or cells are designed to cope with problems arising from poor dexterity or touch sensitivity. A keyguard for the

larger displays can guide the fingertip, or a stylus can be used where consistent and accurate control is required.

2.2 Advantages

These mid-tech solutions offer many advantages, including:

- Increased Functionality compared to low-tech options with recorded messages
- Versatile using similar symbols to paper-based systems but with verbal output
- Customisation / Personalisation
- Accessibility and flexibility of use - anywhere, anytime. Portable for use in most settings.
- Ease of Use with simple interfaces
- Provides independence when simple switch access or message selection is needed
- Reducing anxiety when access has to be immediate with a small collection of symbols
- They are used to initiate communication and answer requests, making a finite number of choices possible.
- Integration with high tech in the form of button switches
- Cost-effective when compared to high-tech

2.3 Disadvantages

As possible disadvantages of mid-tech solutions, the following should be considered:

- May limit the use of complex vocabulary if a user can cope with more advanced communication needs
- Restricted storage capacity limiting the number of symbols/words
- Static display makes it harder to build a broader range of messages.
- Lack of interactive features such as text or symbol prediction and text-to-speech
- Increased communication partner support for template changes
- They may need some maintenance and battery checks
- Some devices are visibly different from mainstream communication tools, which may cause stigmatisation.

2.4 Ethical risks

Ethical risks involved with using those mid-tech solutions may include:

- Misinterpretation of symbols - legal professionals require adequate training and understanding to reduce misunderstandings.
- Mid-tech devices may limit communication access in certain circumstances, such as expanding vocabularies, which may not be possible.
- Increased support is required to develop additional templates or communication options.
- Social stigmatisation may occur if the user feels their technology is very different from those communication technologies used by others in public settings.
- Constant device support and some technical competence are required to set up symbol templates and record messages in a way that suits the AAC user and the setting.
- Ensuring Informed Consent - There will always be a need to ensure that AAC users fully understand the implications of what is expressed.
- Protocols are needed to ensure privacy and any concerns about respect for the AAC user.
- Fair legal representation allowing the use of communication partner support and AAC system preferences.
- Make sure potential bias and stereotyping are avoided with considerations for equality, diversity, and inclusion.
- Ensuring adequate preparation is made so that court personnel understand the use of AAC systems, co-occurring disabilities, and support strategies that may be used.

3. High-Tech Solutions

Dedicated Devices - Devices with built-in speakers and control methods such as eye tracking (Tobii Dynavox TD I-Series)

Introductory description

These devices usually offer built-in software with optional access methods such as eye tracking across symbols or words, finger pointing, or switching control – similar to one mouse button press. The apps used vary

depending on user needs, with various voices, such as speech synthesis and environmental controls. A robust case and other extras, such as mounting devices, can be added.

Purpose

These high-end AAC technologies tend to be considered medical devices because they are solely designed for AAC use and possibly environmental control, such as TV remotes, lighting, etc. They may require a professional's scripting and support to install and configure the specialist software with symbol sets and boards.

They tend to have robust cases as part of the system, enhanced audio output, etc. Mounting systems such as clamps may be needed for wheelchair users with alternative input methods, e.g., eye tracking, switch buttons, or joystick access.

Non-dedicated Devices - Commercial computer-based speech-generating device, e.g. iPad, Android (Tobii Dynavox SC Tablet)

Introductory description

This is an example of an iPad being used with a communication app supporting symbol grids. Speech synthesis works by selecting a symbol linked to text labels or phrases for speech output. Alphabet or word phrase charts and environmental controls for household tasks can also be used. The system can be set up to access other external devices, such as Alexa speech-recognition systems.

Purpose

These devices tend to be proprietary tablets, computers and mobiles with iOS, Android and Windows operating systems that can use a range of AAC apps with the voices offered by the operating systems or uploaded as specialist voices at a later date. They may also require professional support but cost less than dedicated devices. Additional apps can be added to include environmental support. Extras may include carry cases, outward-facing speakers and a selection of keyguards to support dexterity difficulties, mounting plates, etc.

3.1 Type of users

High-tech AAC technologies can be more complex, requiring greater cognitive skills. However, with care, the apps used can be adapted to suit all users with the concept of being aware of the potential users may have when learning to communicate. Those with visual impairments will have the support of a built-in screen reader telling them what is on the screen as well as using speech synthesis as their voice. Screen guards can help activate the symbol cells, and systems can offer virtual scanning across and down the screen with switch access to individual symbols. Apps can also provide interactive visual scene displays, different symbol or word access types, automated prediction, and support for grammatical structures. This allows those with severe physical disabilities access and those with good dexterity.

3.2 Advantages

The most prominent advantages of those high-tech solutions include:

- These offer Increased communication options with a more extensive vocabulary for different settings and situations.
- Dynamic displays allow users to access different symbol topics and messages.
- Synthesised speech output that matches the symbol or word choices
- It can promote linguistic abilities with vocabulary and grammatical adaptations over time.
- Symbol and word prediction – using setting, topic, grammar, etc.
- Integration with a wide range of access technologies such as switches, eye tracking, environmental controls, etc.
- Support and updates can be achieved online and remotely with internet access.
- Access to other computer applications, the internet and social media support greater opportunities for socialisation.
- High levels of customisation and personalisation
- Data logging and tracking potentially allow for a better understanding of user needs, upgrades and updates when required.

3.3 Disadvantages

The following disadvantages might come into play:

- It is costly for the potential user unless there is financial support.
- It can be considered complex unless the right support is available

- Expert technology skills are required when issues arise, which may cause concerns as this is the AAC user's voice.
- Total reliance on technology because it can provide much-improved communication and integration within society when appropriate support is not available.
- Durability and portability may be issues when devices are often moved between different settings.
- Customisation and personalisation may depend on expert support.
- Technological obsolescence may be an issue with technology updates continually occurring and apps not necessarily being updated in synch with the new developments.

3.4 Ethical risks

With those high-tech solutions, the following ethical risks should be considered:

- Misinterpretation of symbols - legal professionals require adequate training and understanding to reduce misunderstandings.
- Informed Consent and ethical considerations are needed when considering vocabulary selection, customisation, and user preferences regarding device use.
- Privacy and data security are linked to personal information, and more advanced communication needs are possible with high-tech AAC devices.
- Care regarding dependency on others for the adaptations and updates made to the AAC device for both technological aspects and provision of the user's linguistics capabilities.
- Continuous care and maintenance are required to ensure seamless communication support over time.
- Symbols, language and content need to be culturally sensitive and respectful.
- High-tech AAC devices tend to be commercial commodities, and care needs to be taken when making decisions prioritising the user's best interests.
- The high cost of devices may lead to access and equal opportunity issues.
- Ensuring Informed Consent - There will always be a need to ensure that AAC users fully understand the implications of what is expressed.
- Protocols are needed to ensure privacy and any concerns about respect for the AAC user.
- Fair legal representation allowing the use of communication partner support and AAC system preferences.

- Make sure potential bias and stereotyping are avoided with considerations for equality, diversity, and inclusion.
- Ensuring adequate preparation is made that court personnel understand the use of AAC systems, co-occurring disabilities and support strategies that may be used.

4. Innovative Solutions (including AI applications)

Gesture Based AAC

Introductory description

Gestures are an important means of human communication. Sensors plus gyroscopes, accelerometers, GPS, or other smart technologies with AI models and data training make it possible for systems to recognise and interpret gestures. They can then provide feedback to users as text or spoken output explaining the gesture.

Purpose

Providing an alternative means of expression for individuals with motor or mobility challenges or those whose gestures cannot be easily interpreted may rely on these technologies and well-known AAC systems. Gesture-based AAC may also help individuals interpret gestures used by others where brain injury or certain types of autism cause gesture recognition difficulties.

Brain-Computer Interfaces (BCIs)

Introductory description

BCI has advanced in recent years to a situation where the interpretation of something a person might want to say but cannot physically verbalise can be decoded directly into speech generated by a computer. This decoding process depends on neural imagery and the use of AI models to speed up the process.

Purpose

When AAC systems are necessary due to severe motor and dexterity disabilities, but speech and language cognitively remain intact, these systems may be an alternative approach to gaining access to communication.

AI for advanced symbol and word prediction

Introductory description

AAC systems that use predictive text and even symbols use AI algorithms to suggest more advanced options than database look-up systems. Several offer grammatically correct phrases and options for answers to FAQs.

Recent innovations created by AI in AAC products have included

- The creation of a new symbol within a symbol set by a text prompt or adapted from an image
- The ability to add tone to communication, such as "sad, angry, happy, sarcastic, etc."
- The ability to expand communicative statements from key words such as "flight, bad" transformed to "my flight was awful, it was late, and the seat was uncomfortable."
- The ability to recognise settings or locations and build initial vocabulary based upon prior experience at that or similar locations. These are limited to the individual or aggregated with other users.

Purpose

These systems may be used on tablets and other mobile AAC technologies. They are designed to increase communication quality and speed and make it easier for choices to be completed.

Cognitive AI to aid computer-based communication.

Introductory description

This describes the technologies that have changed how chatbots and robots can provide speech and language to enhance the ability of AAC users to interact with others offline, online, and in social media situations. One such example is the AAC application "Avaz". Avaz uses AI technology to inject emotion into the speech output, adding a "non-verbal" element into synthesised speech.

Purpose

Currently, these systems use proprietary tablets, computers, and mobiles with iOS, Android, and Windows operating systems that can build on what is already available within an AAC user's toolkit. They will offer users more flexibility and efficiency with

improved voices for more languages, increased access speed, enhanced cultural options for symbol choices and predictive text based on AI-driven situational awareness.

4.1 Type of users

Depending on the type of innovations that occur in AAC technologies in the future, the type of users who will benefit will vary from those with severe physical, sensory and cognitive disabilities to those with mental health difficulties or other types of communication issues as well as all individuals who use technology to aid communication. If the technologies provide increased flexibility and speed of messaging, we all have the potential to gain from the processes involved.

4.2 Advantages

The advantages that already become apparent from those innovative solutions include:

- It enables systems to understand and interpret human gestures and text-based language better.
- It improved Multilingual communication with automated translations and synthesised speech output.
- Personalised content provision with enhanced predictions
- Use of chatbots and remote support tailored to need.
- Improved summarisation of complex text content to aid understanding
- AI systems can continuously learn from user interactions, adapting and improving over time to better meet individual communication needs
- Real-time language correction can help to improve grammar, spelling, and message accuracy.
- High levels of customisation and personalisation
- Data logging and tracking potentially allow for a better understanding of user needs, upgrades and updates when required.

4.3 Disadvantages, weak points

Current weak points in those innovative solutions include:

- Systems fail to understand real emotions and context or have insufficient knowledge, so they misinterpret gestures, text content, etc.
- Bias in training data causes discrimination and failure to fit personal requirements.

- Misunderstandings and failures in the type of output required may cause frustration and reduce the use of the AAC system.
- Failure to cope with multicultural requirements
- Lack of flexibility in different settings - manual adaptations may be needed.
- Specific customisation and personalisation may depend on expert support.

4.4 Ethical risks

Of course, ethical risks should be considered when developing innovative solutions. Some of these are:

- AI systems may require access to large amounts of personal data for training and customisation.
- Lack of security related to sensitive communication data that might be vulnerable to misuse
- Bias in the data used for training AI models results in poor automated predictions, causing discrimination.
- Lack of transparency about the technologies being used reduces feelings of independence, yet there is reliance on technology for communication.
- There is a lack of understanding when there are unintended consequences of using innovative technologies.
- Ensuring Informed Consent - There will always be a need to ensure that AAC users fully understand the implications of what is expressed.
- Protocols are needed to ensure privacy and any concerns about respect for the AAC user.
- Fair legal representation allowing the use of communication partner support and AAC system preferences.
- Make sure potential bias and stereotyping are avoided with considerations for equality, diversity, and inclusion.
- Ensuring adequate preparation is made that court personnel understand the use of AAC systems, co-occurring disabilities and support strategies that may be used.

Some ethical considerations have been repeated for each section as they apply to all situations.