Promoting Professional Prison Practice

Evolution of

PRISON DIGITALISATION

Situation, Risks and Benefits

EuroPris ICT Expert Group

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Content

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Introduction

We are all, as a society, exposed to the influence of modern ICT technologies. Every aspect of our lives is rapidly changing. The incredible pace of ICT development and its widespread availability have opened new perspectives in prisons. The question is no longer whether technology is changing prison organisation, but how quickly.

Prisons have traditionally been closed organisations resistant to innovation and change. However, times are changing. In the past, we saw the cautious introduction of digital technologies in prisons, whereas today, we are surrounded by the advent of smart prisons.

The digitalisation of prisons is a complex and multidisciplinary field. The success of organisational changes relies not only on the development of new technologies but also on strategic planning and change management within prison organisations. These are essential for transforming into modern prison societies that create environments facilitating a more humane execution of sentences, adding new value to prisoner resocialisation, and reducing recidivism. The purpose of digitalising prisons is not simply to use the latest technologies available. Rather, digitalisation should serve as a tool to achieve set goals. With this perspective, we can better understand digitalisation through the lens of time and compare the processes of introducing ICT technologies in European prisons.

Digitalisation brings many new opportunities to the prison world, offering numerous benefits and positive experiences through successful projects. However, the application of new technologies also entails certain risks that should be carefully considered during the planning process. These risks extend beyond the physical safety of all stakeholders in prisons; it is crucial to pay particular attention to the confidentiality of digital communications. Additionally, with the increased presence of artificial intelligence in recent years, the ethical use of technology has become an increasingly important consideration.

It is crucial to recognise that the digitalisation of prisons impacts all stakeholders, including prisoners, their families, employees, other government institutions, and the public. The degree of digitalisation in prisons directly correlates with the extent of its influence on these groups. The more ICT technologies are implemented, the broader their reach and the more profound their impact. For instance, ICT technologies have significantly transformed communication methods within prisons, directly affecting employees, prisoners, their families, and other state institutions.

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The Evolution of Prison Digitalisation: A Retrospective from the ICT Expert Group

It is difficult to portray the development of digital technologies in Europe's prisons as a single indicator. Every country has its own path and its own dynamics of development. Observing development through the example of a single country does not give a picture of the overall situation. But it can give a more detailed view. Through this work we will try to do both. The work of EuroPris ICT expert group during the past twelve years can be used as a basis for the perspective of common themes that have appeared in the field of prisons digitalisation in Europe.

The role of the ICT expert group

As the voice of the prison sector in Europe, the ICT expert group connects prison professionals from all over Europe and provides them with a platform for strengthening professional competences, sharing knowledge, experiences and best practices. ICT in Prison is the oldest and one of most active expert groups of EuroPris. It was founded in 2012 and since then it has been continuously working in two-year terms. The fifth convocation of the group is currently active. Members of the Group are elected by public invitation. The group consists of ten members with different profiles and areas of interest. Members come from different parts of Europe, different organisational cultures, different stages of digitalisation and digital transformation. Current members come from Austria, Catalonia, Croatia, Finland, Ireland, Luxembourg, Netherlands Spain, Sweden and Turkey. The group is led by a chairman with a co-chair and with the help of the EuroPris coordinator. The group enables ICT experts to meet and advise each other, to exchange information, to share knowledge and best practices of their countries. All together in order to collect good examples & give an overview for Europe. By working together on topics, they produce articles, publish them and create a base of shared knowledge. The ICT expert group organises various events (workshops, conferences). All activities are carried out in order to improve communication & cooperation among European Prison and Correctional Services and Strengthen the European network of prison practitioners. During the past years, the ICT expert group organised 6 “ICT in prisons Workshops” and participated in the organisation of 5 Technology in Corrections Conferences. The group produced five articles: “How can ICT make the offender better prepared for release?”, “Payments in Prison Case Study”, “Telemedicine”, “Cloud and Data Protection”, “Collaboration between Penal System and Police”. A special tool for prison professionals was also created. The ICT Matrix is a tool that has been developed for European Prison Services for mapping stages of technology development and for collecting solutions. The information contained in the ICT Matrix is confidential. In 2023, the group organised a roundtable titled *'Meet a EuroPris Expert'*. Recognising the frequent overlap between ICT and other operational areas in prisons, a collaborative meeting was also held with the Real Estate/Logistics Expert Group. Together, they worked on developing guidelines for ICT-LED prison design, fostering interdisciplinary cooperation and innovation.

Beyond the tangible outcomes of the ICT Expert Group's work, it's crucial to highlight the expertise of its members. Comprising current and former members, these experts have significantly enhanced their personal and professional competencies through the group's activities. Their collective efforts have played a pivotal role in advancing ICT technologies within European prisons.

Evolution of ICT topic

Technology evolves at a rapid pace, often outstripping the readiness of societies and organisations to adapt. Some organisations embrace change more swiftly than others. The retrospective of the evolution of ICT topics in prisons takes us back more than 30 years and even 40 years into the past when the first digital solutions appeared in the prisons of some countries. Data from that era are often inaccessible and challenging to compare. Therefore, we will focus on the evolution of ICT in prisons topics over the past decade, which can be summarised through the work and influence of the EuroPris ICT Expert Group. To assess the broader development of ICT technologies, we will analyse themes discussed in ICT workshops, conferences, and EuroPris' Knowledge Management System (KMS). What did the European countries do regarding digitalisation of prisons? What did they research? What did they discuss? What did they implement? These are the questions we will try to answer.

Let's consider 2013 as the starting point for our analysis—the year when we began to see a surge in international cooperation aimed at sharing knowledge and experiences on this topic. From the data available, three key areas emerge: ICT infrastructure, Offender Management Systems (OMS), and Electronic Monitoring (EM). ICT infrastructure serves as the foundation for deploying future technological solutions, with prison systems laying the groundwork for a forthcoming technological revolution. The focus on OMS naturally follows, as by that time, nearly all countries had implemented some form of OMS. The advancements in infrastructure and emerging technologies created opportunities for modernising these systems. However, the conversation around OMS didn't end there. Electronic Monitoring also began to take root, offering a technology poised to enhance alternative sanctions and alleviate overcrowded prisons.

Recognising the benefits of information sharing, prison experts expanded their focus to include a broader range of topics in 2014. While the development of OMS (Offender Management Systems) remained a central theme, discussions began to explore its application under different conditions, its level of advancement, and its integration with healthcare services. Interest in using videoconferencing for prisoner visits and court hearings also grew a topic whose importance would become more evident over time. Additionally, the use of biometric data started to emerge as a subject of debate.

ICT technologies are playing an increasingly vital role in prisons. By 2016, the exchange of best practices among European prisons had significantly expanded, leading to a rise in successful projects and shared real-world experiences. The use of Offender Management Systems (OMS) remained a key focus, particularly in the context of inter-agency collaboration between the police, courts, prisons, and probation services. Videoconferencing emerged as a major topic, further extending into the realm of telemedicine. Additionally, new discussions began to explore the use of ICT technologies by prisoners themselves.

The rise of discussions on digital strategies signals that the digitalisation of prisons is evolving into a broader digital transformation. By 2018, long-term strategic planning was increasingly taking precedence over individual ICT projects. Videoconferencing remained a critical topic, with more successful practices being showcased, including the use of video translators. Additionally, the use of ICT technologies for the resocialisation and education of prisoners, as well as for managing payments within prisons, became key areas of focus.

The COVID-19 pandemic quickly transformed perceptions around the use of ICT technologies, accelerating the pace of digitalisation as organisations adapted to change more swiftly. Indeed, 2020 marked a significant turning point, with the impact of Covid-19 and the role of technology in supporting prisons during the crisis becoming central topics. The importance of videoconferencing, long discussed in previous years, was reaffirmed as it emerged as one of the most crucial tools in European prisons. Additionally, new areas of interest began to take shape for prison ICT experts, including artificial intelligence and the concept of smart prisons.

Post-pandemic, prison organisations have become increasingly receptive to ICT technologies. The focus has shifted to prisoner-centric technologies such as kiosks, mobile devices, and the legal frameworks governing their use. Smart prisons, virtual reality, and artificial intelligence are emerging as key topics in European correctional systems. ICT technologies are now recognised as essential tools for enhancing prisoner resocialisation and reducing recidivism.

By 2024, prison systems are increasingly focused on the future, collaborating to shape the "prison of tomorrow" through digital technologies. Key discussions are centred around the use of AI and big data, alongside the exchange of experiences with virtual reality. The concept of digital rehabilitation is gaining prominence. Notably, discussions in 2024 have become more multidisciplinary, with ICT experts and architects working together to address the challenges of designing new, digitally integrated prisons.

If we examine the data presented earlier in this paper, it becomes clear that the digitalisation of European prisons has been a gradual process, with the focus shifting across different areas over time. The evolution of ICT in prisons over the past decade can be summarised in several key stages:

- **Phase One:** The initial focus was on building robust ICT infrastructure and developing high-quality Offender Management Systems (OMS) for effective data collection—data that would become essential in later stages.
- **Phase Two:** The next step involved sharing the collected data with other key stakeholders, including police, courts, prisons, and probation services, to enhance inter-agency collaboration.
- **Phase Three:** The focus then shifted to implementing ICT technologies directly for prisoners, aimed at improving their rehabilitation and daily lives within the prison environment.
- **Phase Four:** The current phase emphasises digital strategies and comprehensive digital transformation, including significant organisational changes that facilitate the adoption of advanced digital technologies such as smart prisons, artificial intelligence, and virtual reality.

European prison systems are at varying stages of this digital evolution. Some of the more advanced systems have already embraced the fourth phase, while others are just beginning to enter the third. The stage of development in each country depends on a variety of factors, including available infrastructure, financial and human resources, organisational culture, and more.

An example of prison digitalisation – Austria

Political responsibility for the Prison System in Austria is vested in the Minister for Justice. The Austrian Prison Service is organised within the Ministry of Justice. It is headed by a Director General supported by four departments. The Austrian Prison Service within the Ministry of Justice is administered centrally and located in Vienna, Austria.

There are 27 institutions in the Austrian Prison System consisting of 15 for pre-trial detainees, 9 for convicted detainees and 5 for mentally disturbed offenders and offenders of weaning treatment.

There are about 9,000 prisoners and 4,500 staff in the Austrian Prison Service

Digitalisation path – The digital age in the Austrian Prison Service began back in 1999 by wiring the facilities and later on introducing the first iteration of an offender management system. It was a central (mainframe PL/1) server version with a Java web frontend and evolved over the years with more and more features and some workflow elements. As it was needed to renew the 25 years old offender management system and having an up do date digital workflow solution, we are now in the transition phase were the existing "IVV" version is running next to the new "eVM" system till approximately 2028.

Digital prisons – As word wide, also in Austria the Pandemic brought us fast transition in video conferencing technology in the flavour of video visits, video calls with lowers and courts and videoconferencing with integrated interpreting service for health care and communication with foreigners. For on-site visits, we introduced an electronic booking tool, which made a big impact in dealing with the processing of the physical visits.

Telemedicine started in 2016 with video doctor visits together with a video interpreting service. This very well proven service is getting no to the next step by connecting to diagnostic devices and a secure report transmission.

E-Learning was introduced to all prisons in a classroom setting and should be available in cell in the future. The "ELIS" e-learning platform is operated together with Germany by hosting the system in Berlin.

Indicator based controlling is done since 2008 and restarted in 2020 by an in-house development called "Cockpit" which is based on MS power BI. With the establishment of interfaces to several applications (OMS, HR, Finance, EM, Security etc.) in more than hundred different fact- and dimension tables, brought together in a set of KPI's, we have an excellent and prognostic view of the organisation.

In the security department, we are working on bringing all analogue devices (central monitoring, cameras, sensors, signalling) systematically to digital IP based solutions. At the moment we are piloting drone detection and deactivating as well as mobile device detection and blocking.

The future – in various research projects we take a closer look into the digital prisoner-related processes, the impact of AI in the closed prison environment and in building new and secure "digital„ prisons accompanied with an interdisciplinary group of scientists, the private sector and internal

experts. This ongoing process started in 2020, and we should see first pilot installations in 2024. These projects deal with:

- Digitalisation of analogue prisoner related documentation processes
- AI based multimodal approach of combining sensors and wearables into a consistent fusion model to capture complex behavioural patterns.
- Developing sustainable constructional and technical standards for the Austrian prison facilities.
- Brining the information and communication technology to the inmates through supporting accompanying research.

An example of prison digitalisation – Croatia

The prison system of the Republic of Croatia operates under the jurisdiction of the Ministry of Justice, Public Administration and Digital Transformation. According to the Regulation on the Internal Organisation of the Ministry, Directorate for Prison System and Probation is a specialised body within the Ministry responsible for administrative and professional tasks related to the enforcement of the prison sentence. This organisational structure comprises the Head Office for the Prison System, the Head Office for Probation, 15 probation offices, 14 prisons, 7 penitentiaries (including the Prison Hospital in Zagreb), 2 correctional institutions for juveniles, the Diagnostic Centre in Zagreb, and the Training Centre. The primary legislative framework governing the enforcement of the prison sentence for adults in Croatia is the Act on the Enforcement of Prison Sentence that incorporates nearly all recommendations found in international documents regarding prisoners' rights, particularly the standards set by the European Prison Rules.

Digitalisation Path - The digitalisation of the prison system in the Republic of Croatia began later than in many European countries and initially progressed slowly. However, a significant shift occurred about a decade ago, marking a drastic change in the approach to digital technologies. Since then, substantial progress has been made, and today, the Croatian prison system stands alongside many European counterparts in terms of digital advancement. A pivotal moment in this transformation was the decision to overhaul the ICT infrastructure, laying the groundwork for implementing various technological innovations. Additionally, the COVID-19 crisis accelerated the adoption of digital technologies, overcoming resistance and demonstrating the potential for technology to enhance prison operations.

Digital Prisons - At the core of every digital prison is the Offender Management System (OMS), which in Croatia dates back to 2006. However, the true digital transformation began in 2019 with the introduction of a new comprehensive information system (ZPIS). This advanced system not only tracks data on prisoners but also integrates all processes related to sentence execution, facilitates fully digital case management, enables data exchange with other institutions, and includes robust reporting functionalities. The standardisation of procedures has been one of the most significant benefits of this system.

Beyond OMS, digital technologies have transformed other aspects of prison life. The COVID-19 pandemic, for instance, prompted a surge in video conferencing usage, which now plays a key role in prisoner rehabilitation by enhancing communication with family, courts, and other institutions. Innovations like in-cell phones, video call kiosks, and digital money management systems contribute to a more efficient and secure environment. Technology has also facilitated communication with non-Croatian-speaking prisoners and strengthened security through upgrades such as transitioning from analog to IP-based video surveillance systems. Moreover, projects involving virtual reality (VR) are being implemented and in progress to support prisoners' rehabilitation and probation activities.

The Future - Looking ahead, future activities are planned with two main goals:

- Enhancing Existing Infrastructure: Introducing new technologies to optimise existing processes within current facilities.
- Designing New Prisons: Incorporating cutting-edge ICT technologies into entirely new prison facilities.

One of the most pressing challenges remains the infrastructural limitations, particularly in expanding the availability of ICT services for prisoners. However, with strategic planning and continued investment in digital technologies, the Croatian prison system aims to further modernise, ensuring efficiency, security, and improved rehabilitation outcomes.

An example of prison digitalisation – Spain

The Spanish Prison System is regulated under the first law of our democracy, the Penitentiary Law 1/1979, of 26th September. This law is based on two main principles: the observation of inmates and the individualisation of the sentence execution, depending on the results of the previous observation. Also, in order to complete its contents, the Penitentiary Law is developed in the Penitentiary Regulation of 1996.

From the point of view of the administrative organisation, the Spanish Prison Service (General Administration) has a central unit located in Madrid, and ordinary and open prisons (71 and 36, respectively) located in Madrid and outside the capital city.

Digitalisation path- The COVID pandemic had a great impact in Prison Systems. In case of the Spanish Prison Service, it was an opportunity to achieve two main ideas. First of all, that the application of the law was sometimes too restrictive. In this sense, at the beginning of the pandemic, 4000 inmates that were in open prisons, were put under monitoring surveillance. Secondly, the pandemic showed us that the technology could enter the inside of prisons without any big impact from the security perspective. For example, inmates in ordinary prisons started having video calls with their families.

Digital prisons – As a result of this evolution, the Penitentiary Regulation of 1996 has been reformed in April 2022. The aim is to overcome the digital gap that affects inmates when they come outside prison after the sentence execution. The way to achieve this aim is to allow the inmates to develop their rights (education, maintaining family relations and others) through new technologies. As an example, inmates are celebrating video conferences. Also, e-learning is implemented with specific universities in order to follow some university studies as Law, Psychology and others. This possibility existed time ago, but nowadays the paths to walk are more and much wider.

Apart from this technological evolution related to the COVID pandemic, the Spanish Prison Service is based on the use of inmate's data under an offender management system, which is conform by all the data under the system. In this moment, the Prison Service is performing some instruments to its complete digitalisation, so that no paper should be used.

Other digital tools have been also implemented during the years. As example, telemedicine, simultaneous translation, video conferencing with courts and in recent years, as new possibilities, inmates can receive messages from their families and the use of kiosks is planned to be developed.

In a more general perspective, it can be stated that the impact of the new technologies, the progressive digitalisation of prisons and the improvement in their use and the use of Artificial Intelligence it is progressively leading to the use of more instruments of risk assessments. All these with its risks and its benefits.

The future – In application of the new regulation that allows the use of internet inside prisons, the Spanish Prison Service will have to introduce new infrastructures inside prisons for the better functioning of technology. Also, the use of technology will help to improve video surveillance systems inside prisons to protect inmate's rights. The idea is to have a harmonised video surveillance system in all prisons under a unique control monitor.

Risks and benefits

Benefits	Risks
More efficiency (video conferences with courts/ telemedicine/ video with lawyers).	Sometimes necessary visits of inmates to the courts, lawyers or hospitals are substitute easily by a video. It is difficult to have a criteria of when is necessary to maintain physical contact.
More contact between inmates and families by video conferencing. It is the same as in the ICT group. We see us on video conferencing more frequent, we can know each other more, we feel we can do more things together (like this article).	We are losing human and social necessary contact between inmates and families. For example, if an inmate has family in South America, video conferencing is a substitute of a long and expensive travel. This is good but also has a negative side.
Prison officers can focus on necessary tasks because digitalisation contributes to a human substitution in bureaucratic or automatic activities.	Accumulation of bureaucratic and digital tasks. It is very difficult to substitute old ways of working by new ways of doing things. Also, officers have the feeling that everything is more complicated that in the past.
A new way of developing inmate's rights. Can we think about inmates working in prison? Maybe telematic work allows inmates to continue with their jobs outside.	In relation to digital prisons, the loss of human contact and real observation of inmates. We are more focused on data analysis than on human observation/contact and its importance for the institutions.
Technology as an instrument of reintegration. The possibility of developing digital jobs for inmates.	In relation of AI and risk assessment instruments, we have to talk about the risks of not knowing what reasons the administration has to make decisions on your person. The difficulty of understanding the algorithm.
Technology in prisons as a way of stopping the digital barrier that affects inmates with long sentences.	In relation of AI and risk assessment instruments, the danger of losing the individual factors of the evaluated inmate.
Transparent decision-making. Digitalisation brings large amounts of data that help staff make decisions.	
A safer community. Technology can help monitor inmates outside of prisons. In court, on probation, on vacation or in a medical facility.	

Conclusion

Looking back to the beginning, it's clear that digitalisation introduces many new opportunities to the prison system. The most significant of these have been identified and explained, with the ultimate goal of utilising ICT to create a secure, efficient, and humane penal system. A key focus is on equipping inmates with digital skills to facilitate their reintegration into society after release.

This goal can be approached in two primary ways:

First, technology plays a crucial role in enhancing fundamental rights within prisons. This includes improving family communication, general contact with the outside world, and even enabling digital work opportunities for inmates. The potential for breaking down existing barriers is immense.

Second, employing technology with inmates helps address the digital divide, particularly for those serving long sentences. This reduces the risk of them being left behind in an increasingly digital world.

However, digitalisation is merely a tool in the broader, long-term process of transforming prisons through technology. The ambitions are high, and as technology becomes more advanced and accessible, the key to success lies in effective change management.

The question remains: Are we ready to embrace these changes?

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