

DigiFusE

DIGITAL FUSION ENVIRONMENTS

WP2

DifiFusE method Germany



WESTDEUTSCHER HANDWERKSKAMMERTAG

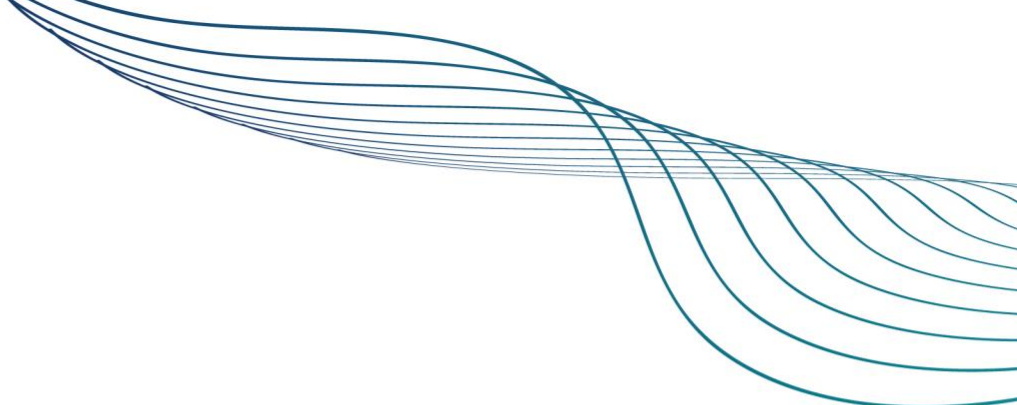


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Chapter 1: Introduction

1.1 What is the Erasmus+ DigiFusE-project?

The DigiFusE project aims to create a practical, evidence-based guide for successful digital educational environments to support (closed) facilities for vulnerable people. To this end, the scope and challenges will be analyzed and strategic, organizational, informational, and technical aspects will be considered, taking into account both the various stakeholders and the specific security aspects relevant to this type of environment.

DigiFusE will thus be characterized by a community of experience, sharing experiences with the partners' already integrated digital learning environments (BLEEP for reintegration into society and the labor market, TRIANGLE and PERSPEKTIVE for professional qualifications) and research into effective methods for vulnerable target groups, recognizing the importance of self-development and effective learning in (closed) care facilities and taking into account the increasing demands and needs of these facilities to keep pace with current developments in the digital society.

The project will employ three different educational areas:

BLEEP: a blended learning environment that integrates traditional and digital learning methods. It supports prison staff by providing a similar framework for acquiring new skills and approaches, and is aimed at teachers, mentors, social workers, and reintegration trainers.

TRIANGLE: A secure digital education system developed for vocational qualifications in closed institutions, covering formal and non-formal education. TRIANGLE addresses the challenge of building skills and developing portfolios in a secure internet environment and can be used in a digital learning environment.

PERSPEKTIVE: Promoting the reintegration of (former) prisoners into the labor market. It enables an exchange of experts and prisons from seven European countries at the working level. The project partners are developing a handbook with educational activities to strengthen the social and professional skills of inmates, which will be transferred to an online platform and made available to European prisons as part of DigiFusE.

The project consortium consists of partners from the Netherlands, Germany, Italy, Turkey, Portugal, France, and the European organizations EAEA and EPEA:

- ClickF1 (Netherlands)
- West German Chamber of Crafts and Skilled Trade council (Germany)
- Aproximar (Portugal)
- STEPS (Italy)
- EAEA (Belgium)
- KOVALI (Turkey)
- EPEA (Norway)
- Smart Corrections (France)

Further information can be found on the project website: <https://www.digifuse.eu/>

1.2 What is the DigiFusE method about?

The target group

The WHKT supports the testing and further development of the PERSPEKTIVE digital learning platform, which is being created as part of the DigiFusE project. The platform ties in with the Erasmus+ PERSPEKTIVE project, which aims to strengthen the vocational skills of prisoners through experiential activities.

A central component of the project is the development of a handbook aimed specifically at prison staff. It is intended to support them in carrying out the exercises developed together with prisoners in order to promote their social reintegration and access to the labor market.

The PERSPEKTIVE platform will clearly present these exercises, which have previously been tested in various European prisons, and provide both theoretical background information and practical implementation options. Like all other project activities within the framework of DigiFusE, the platform is aimed at prison staff, prisons in general, and prisoners themselves.

As part of a field analysis, various interest groups within these target groups were interviewed. These included:

- At the strategic level: representatives of the Ministry of Justice and the management of Heinsberg Prison
- At the organizational level: management staff at Heinsberg Prison
- At the information level: employees of the education department at Heinsberg Prison and teachers from the PERSPEKTIVE network
- At the technical level: IT departments at the WHKT and prisons

This feedback is being incorporated into the further development of the platform and is helping to create a practical digital learning program for the prison system that is tailored to the target groups.

1.3 How is this method built up?

In order to systematically analyze the diverse results, the secondary and field research is based on the SOIT model—a four-stage framework concept that encompasses strategy, organization, information, and technology. The SOIT model was originally developed as a guide for the digital transformation of companies and serves here as a basis for categorizing topics related to the digitization of education in the prison system. Using this structure, we examine: (1) the strategy level, which deals with the overarching vision, guidelines, and external orientation; (2) the organizational level, which focuses on governance, culture, and human factors within the prison system; (3) the information level, which deals with data, educational content, and knowledge management; and (4) the technology level, which deals with infrastructure, tools, and security.

Field research:

This research was continuously adapted during the pilot phase based on:

1. The wishes and principles as well as the results of various decision-makers
2. Interviews/evaluations with various participants within the organization
3. Consultations with the national working group and the editorial team
4. Supervision and the administrator/developer of PERSPEKTIVE

How can you use this?

Each chapter:

- Introduction at SOIT level
- Secondary research: Translation of the same content into all languages
- Field research: Translation of the different countries and situations
- The general EU method of DigiFusE: Secondary research, as in the different countries, and an analysis/summary of the different field research of the different countries, situations, and instruments.

Chapter 2: Strategic level

2.1 Introduction

In order to successfully return to a society where digitalization has become the new normal, individuals must continuously adapt and acquire new skills. While rehabilitation goals and measures to support a successful return are everywhere and increasingly part of the efforts of the judiciary, the fact that this should also include a return (or in many cases an introduction) to the online sphere is, in most cases, not part of these efforts. This absence at the strategic and political level often results in complicated regulatory and legislative adjustments, a conservative attitude toward change, and limited resources.

The SWOT analysis at the strategic level is based on the following interview questions (taking into account the SWOT levels of strengths, weaknesses, opportunities, and threats):

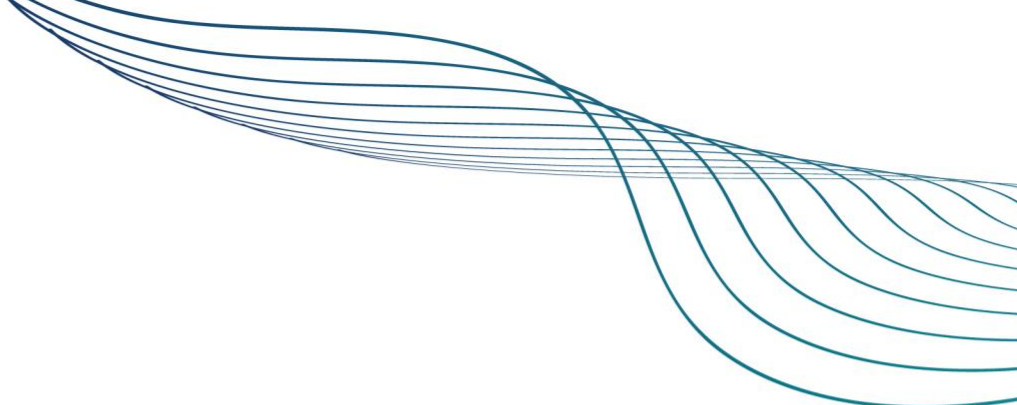
- What are your organization's ambitions in creating digital education?
- What strong connections does your organization have with local, national, or European (governmental) organizations?
- What are some things your organization could improve strategically?
- What connections does your organization lack or would like to establish?
- What could hinder the implementation of the PERSPEKTIVE platform within your organization at a strategic level?
- How can the project contribute to your organization at a strategic level?

2.2 Desk research

Strategic level: opportunities, obstacles, and reality

At the strategic level, a significant issue is the influence of public and political discourse on digital initiatives in prisons. Researchers point to tensions between different ideologies when it comes to introducing technology in prisons.

When it comes to digitization in prisons, there are two opposing perspectives: for some, allowing prisoners to learn or send emails using tablets sounds like “luxury behind bars.” For others, it is simply necessary because our everyday lives outside have become almost completely digital. This is precisely where the tension lies: punishment and security on the one hand, rehabilitation and education on the other. This debate is taking place in Germany as well as internationally – only it is often presented in a very simplified way in the media.



Public opinion – “Internet in prison?”

The topic is often met with skepticism by the public. Headlines such as “Internet in prison” give the impression that prisoners are being rewarded. However, the judicial authorities are not concerned with entertainment, but with something completely different: digital systems are intended to better organize education, administration, and communication. Berlin, for example, has been testing so-called prison cell media systems for several years. These allow prisoners to use certain services, such as learning programs or digital application systems.

The hope is that everyday life in the institution will become calmer, the staff will be relieved, and prisoners will learn skills that they urgently need outside (Senate Department for Justice, Diversity, and Anti-Discrimination Berlin, 2022).

Studies from the UK show that such systems can even reduce recidivism rates and disciplinary violations (McDougall et al., 2017). When explained in this way, digital access does not seem like a bonus, but rather an investment in security – because fewer recidivists mean greater protection for society.

In North Rhine-Westphalia in particular, it is emphasized that the high number of prisoners without a school-leaving certificate (64%) and without completed vocational training (over 90%) represents a strategic challenge. Without targeted digital education programs, this group is at risk of being permanently excluded from social participation. Strategic pilot projects such as the use of ELIS are intended to remedy this situation, but have so far only been implemented to a limited extent (Ministry of Justice of North Rhine-Westphalia, 2022).

Human rights and laws – why Germany must act

Legally, the situation in Germany is clear: the Prison Act stipulates that prisoners should be prepared for a life without crime (Section 2 StVollzG). In addition, living conditions in prison should be aligned as closely as possible with conditions outside (§ 3 StVollzG). Today, this automatically means the digital reality of life (StVollzG, 1976/current versions).

In addition, there are international guidelines: the United Nations' “Nelson Mandela Rules” (UN, 2015) and the European Prison Rules (Council of Europe, 2006) require that prisoners have access to education comparable to that available to society at large. However, education without digital components is no longer realistic. The Council of Europe document “Recommendation R(89)12” also

explicitly states that prison education must not be inferior to education outside prison (Council of Europe, 1989). It follows that Germany must not only allow digital offerings, but actively promote them.

In fact, there are programs such as “ELIS – E-Learning in Prison” that provide prisoners with learning platforms. There, they can catch up on schoolwork or take vocational courses (BMAS/European Social Fund, project report 2019).

ELIS has already been introduced in North Rhine-Westphalia, but access is strictly regulated. In many cases, use is limited to standardized modules, while more advanced offerings such as digital job application training or language courses are only available in isolated cases. This reinforces the tension between the legal principle of equalization and security-oriented practice.

Money and partnerships – who pays for it?

Prisons have tight budgets. Tablets, educational software, and secure IT systems cost a lot of money. That is why the federal states work with specialized companies that supply closed systems. It is important that data protection and security are maintained. One example is the Fraunhofer Institute's “ResoDigi” research project: Tablets were tested in prisons that only allow certain services, such as learning programs, applications, or appointment management. Feedback showed that the system works and improves everyday life in prison (Fraunhofer FOKUS, 2021).

The critical question remains: Will prisoners or their families be charged for using the system? Some countries charge fees, which once again disadvantages the socially disadvantaged. It is important here that cooperation with private partners does not lead to new inequalities.

Desk research results from North Rhine-Westphalia also indicate that additional costs for participation in education – such as learning materials or access restrictions – affect the most disadvantaged groups in particular. Since many prisoners come from precarious socioeconomic backgrounds, equitable financing must remain a strategic priority.

Benefits and impact—what does it really achieve?

Germany has conducted few studies of its own on the impact of these programs. However, experience from other countries and initial German pilot projects show that

- Better atmosphere in prisons: Digital self-service systems reduce the workload for staff and give prisoners more personal responsibility (Fraunhofer FOKUS, 2021).

- Preparation for life outside: Anyone who is not familiar with digital services today is at a significant disadvantage in everyday life – whether it be when applying for jobs, dealing with authorities, or banking (Reisdorf & Jewkes, 2016).
- Recidivism prevention: There is international evidence that digital education can reduce recidivism. Long-term research is still lacking in Germany, but it is plausible that the effects will be similar (McDougall et al., 2017; BMJ, 2021).

For North Rhine-Westphalia, it is emphasized that a combination of school, vocational, and digital education programs is particularly necessary to make relapse prevention effective. Only if digital programs support recognized educational qualifications and are integrated into existing rehabilitation concepts can their strategic benefits be fully exploited (Ministry of Justice of North Rhine-Westphalia, 2022).

Conclusion – Where does Germany stand?

All in all, it can be said that Germany has the legal basis and, in the meantime, also the first practical approaches to implement digital rehabilitation. Berlin, North Rhine-Westphalia, and Bavaria are demonstrating with pilot projects how tablets and e-learning can work in prisons. However, the picture is still mixed – each federal state decides for itself how quickly it wants to move forward.

The major challenges are:

- public opinion, which often misunderstands digital offerings (see Berlin pilot project),
- financing, because IT is expensive in prisons,
- and continuity, i.e., the question of whether prisoners can continue to use digital services after their release.

If we take the task of rehabilitation seriously, there is no way around it: prisons in Germany must offer digital education. Not because it is convenient, but because it creates security – for prisoners who are to regain their footing outside, and for society, which wants to see fewer repeat offenses.

List of sources:

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2.3 Field research

This chapter analyzes the strengths, weaknesses, opportunities and challenges in the implementation of digital educational environments in Germany at a strategic level - based on the assessments of members of staff at Heinsberg Prison.

Digital education in closed institutions, in the case of the partner country Germany prisons, primarily aims to prepare inmates for reintegration into the labor market. Targeted educational programs can and should promote key professional skills in order to facilitate the transition to working life after prison. The introduction of digital educational environments in prisons therefore offers numerous advantages, but also poses challenges.

PERSPEKTIVE promotes work-related skills for prisoners and can be seen as a valuable addition. However, an often missing or undeveloped digital and technical infrastructure in prisons poses a challenge. A structured provision of digital educational offers can relieve the burden on educational staff, enabling an efficient educational process.

In addition to this challenge, there are other weaknesses that need to be taken into account. In the prison of Heinsberg surveyed by the WHKT, there are already cooperations with various internal and

external organizations. These include employment agencies, volunteer counselors and external sports clubs that support inmates in their personal development and social reintegration. This is a particular strength for the reintegration of prisoners into the labor market. However, further external cooperation is currently not considered necessary, which means that potential synergies remain unused. There is also a certain structural rigidity in the justice system, which makes it difficult to implement new educational formats flexibly. There is also no perceived need for optimization at management level, which could slow down the further development of digital educational offerings.

At the same time, digitalization offers great opportunities. In addition to promoting the reintegration of prisoners into the labor market through digital education, which imparts important skills and professional competencies, DigiFusE offers the opportunity to further develop educational formats and establish them in other prisons in the long term. The scalability of the digital PERSPEKTIVE platform, which is being implemented as part of DigiFusE, could therefore contribute to a nationwide improvement in educational opportunities in the prison system.

Despite these positive aspects, potential risks must remain in mind. Traditional structures could cause resistance to digital education measures, which makes acceptance more difficult. In addition, the implementation and continuation of the project are dependent on political and financial conditions. Security concerns or restrictive regulations in the prison system could also represent hurdles that need to be overcome.

Targeted strategies should be developed to ensure the success of digital education measures. The existing infrastructure can be used to further expand digital education and optimize professional reintegration. At the same time, external collaborations should be reconsidered to create additional education and employment opportunities. Internal training and awareness-raising measures are crucial to reduce potential resistance. Finally, strategic planning and continuous evaluation should ensure that digital education formats can be sustainably integrated and further developed in prisons.

One of the greatest strengths is an existing digital infrastructure that facilitates implementation, even if this is based on basic applications.

Chapter 3: Organizational level

3.1 Introduction

This limited strategic attention to digital needs is also reflected in an organization where there is little to no scope for supporting the necessary digital transformation and interventions: a lack of digital skills, limited knowledge and guidelines on digital opportunities, and restricted access to digital

environments for both employees and service users are a major problem in many organizations. Blended (a combination of online and offline) learning and reintegration environments that are flawed are often a source of frustration in a complex situation where it is crucial that effective and functional steps can be taken within a feasible scope.

The SWOT analysis at the organizational level is based on the following interview questions (taking into account the SWOT levels of strengths, weaknesses, opportunities, and threats):

- What positive capabilities and resources does your organization have?
- Which internal processes or systems are particularly effective?
- What skills and experience do the employees in your organization have?
- Where are the limits of your resources?
- Do case managers/employees/interns know enough about the PERSPEKTIVE project and the platform to be able to offer the tool to the target group?
- Are there any missing links between professionals that are necessary for the target group to make optimal use of the PERSPEKTIVE project and platform?
- To what extent could the PERSPEKTIVE project and platform hinder your organizational structure?
- How can the PERSPEKTIVE project and platform contribute to the organization (e.g., structure, employee turnover)?

3.2 Desk research

Organizational level: Culture and coordination as the key to transformation

The organizational level focuses on the people and structures that need to implement digital transformation on the ground. A dominant theme is the role of prison staff and institutional culture in enabling or hindering innovation.

The question of how digital education can be implemented in German prisons is not only a technical challenge, but above all an organizational and cultural one. Looking at the organizational level—i.e., the role of staff, institutional culture, and processes—shows that the same dynamics described in international studies also apply to Germany. At the same time, the German legal situation and practice point to particular areas of tension that shape progress.

Stakeholders and institutional culture in the German prison system

The German Prison Act (StVollzG) and the state prison laws stipulate that education is an essential part of rehabilitation (Section 3 StVollzG, Section 29 ff. StVollzG). However, digital media and learning platforms have so far only been integrated into everyday prison life in isolated cases. Prison staff play a central role here, acting as gatekeepers who control prisoners' access to digital education opportunities.

International research indicates that security concerns and skepticism among staff are among the biggest obstacles to digital education innovations (Reisdorf & Jewkes, 2016). These same patterns can also be found in Germany: a study commissioned by the Federal Ministry of Justice in 2020 found that many prisons are reluctant to use digital technologies, often out of concern about misuse or loss of control (BMJV 2020, pp. 46–48).

Prison officers are primarily trained to maintain order and security. From this perspective, any new technology initially appears to be a potential disruption. The fact that even low-risk applications such as offline word processing or e-learning modules are blocked has also been documented in German pilot projects, such as the introduction of secure learning platforms in North Rhine-Westphalia (Seifert, 2021). At the same time, evaluations show that where staff were involved and trained, initial skepticism turned into acceptance (Karnath et al., 2022).

This confirms that a cultural change is necessary so that digital education is understood not as a threat but as a contribution to security. When prisoners are constructively occupied, the likelihood of disciplinary violations decreases – an effect that has also been reported in German pilot projects on the use of “PrisonCloud” or secure laptops (Lower Saxony Ministry of Justice, 2023).

In North Rhine-Westphalia, volunteers play an important role alongside full-time staff. At Geldern Prison, for example, around 50 volunteers support educational and counseling services, ranging from addiction prevention to job application training. This shows that rehabilitation and digital education do not only depend on prison culture, but can also be strengthened by external actors and civil society engagement (Ministry of Justice of North Rhine-Westphalia, 2022).

Staff training and capacity building in Germany

The lack of digital literacy among prison staff is another bottleneck. While teachers in the prison system usually come from external educational institutions, civil servants rarely receive special training in the use of e-learning systems. A study by the German Education Server (DBS 2021) shows that many educational professionals consider the integration of digital tools to be enriching, but at the same time point to a lack of technical support and insufficient training opportunities.

The UNODC (2017) emphasizes the need for specific training for educators in the prison environment – this requirement also applies in Germany. Although there are training programs in individual federal states, there is still no nationwide strategy.

In 2022, North Rhine-Westphalia introduced the role of “digital officers” in some institutions, who act as an interface between IT, education, and security (Ministry of Justice of North Rhine-Westphalia, 2022). Such models could serve as a model for other federal states.

Added to this is the dependence on external partners: many digital education programs in German prisons are based on cooperation with adult education centers, universities, or NGOs. One example is the “Learning Behind Bars” project in Baden-Württemberg, which provides digital learning modules. These collaborations bring expertise, but carry the risk of a lack of sustainability if the knowledge is not permanently transferred to the prison organization.

Desk research data on North Rhine-Westphalia also shows that external educational institutions such as vocational schools, chambers of industry and commerce (IHK), and chambers of crafts (HWK) play a key role in enabling recognized qualifications. This increases the chances of labor market integration after imprisonment, but presents prisons with the organizational challenge of coordinating educational logic, security requirements, and external standards.

Structural and organizational hurdles

In Germany, too, it is evident that organizational priorities often work against educational projects. Prison administrations must coordinate rooms, timetables, and security requirements—and education often takes a back seat to work duties (Section 37 of the Prison Act). A study by the Central Office of Criminology (KrimZ, 2019) confirms that educational opportunities are limited by organizational logic, pointing to problems such as restricted access times and a lack of technical infrastructure.

The federal structure is particularly problematic: each federal state regulates its own prison system independently, leading to widely diverging digital strategies. While Lower Saxony launched pilot projects with tablet solutions in 2023, other states have yet to take any such steps (Conference of Ministers of Justice, 2023). This fragmentation leads to disruptions, for example when prisoners lose access to digital learning content when transferred between institutions – precisely the problem described in international studies.

In North Rhine-Westphalia, this means that programs such as ELIS or vocational training can vary greatly, depending on the resources and priorities of the respective institution. This makes it difficult

for prisoners to maintain continuity in their learning processes, especially when they are transferred within the state.

Coordination and systemic support

Although German prison policy has recognized the need to link education and digitization more closely, there is a lack of overarching structures. A systematic, nationwide learning management system for prisoners does not yet exist. Instead, individual states or even individual institutions are developing isolated solutions. Comparable approaches such as the British “Virtual Campus,” which makes learning progress portable when prisoners are transferred to another institution, are urgently needed in Germany. In the literature, this is referred to as “interoperability” (Van De Steene & Knight, 2017).

Initial steps are visible: in 2022, the Federal Ministry of Justice initiated the development of a “digital strategy for the prison system,” which includes the standardization of IT systems (BMJ, 2022). However, concrete implementation results are still pending.

Another challenge is linking with external education systems. In order for certificates acquired in prison to be recognized on the labor market, cooperation with adult education centers, chambers of crafts, or universities is needed. Projects such as the distance learning program offered by the FernUniversität Hagen for prisoners show that such cooperation is possible—but so far only for a small group of prisoners.

Trust and leadership responsibility

In addition to structures and resources, trust between stakeholders plays a key role. In German prisons, the relationship between security personnel and educators is often tense. Educational staff criticize that security priorities restrict their work, while officials distrust educational programs (KrimZ, 2019). However, trust can grow if both sides develop common goals and have positive experiences with digital tools.

The role of prison management is crucial in this regard: studies show that reform-oriented management creates more space for digital education, while conservatively run institutions tend to block it (Seifert, 2021). This confirms the international observation that leadership responsibility has a significant impact on culture.

Conclusion – Where does Germany stand?

The digital transformation of the prison system in Germany is less a technical task than a cultural and organizational one. Legal foundations such as the StVollzG (Prison Act) ensure education as a social rehabilitation mandate, but implementation often fails due to skepticism on the part of staff, inadequate training, organizational routines, and federal fragmentation. However, successful examples – from pilot projects with tablets to collaborations with universities – show that digital education is possible when trust is built, staff are trained, and structures are coordinated.

The example of North Rhine-Westphalia shows that close cooperation between state institutions, external partners, and volunteers forms the organizational basis for successful digital education. A nationwide strategy should therefore address not only technical issues, but also cultural and organizational issues in order to promote equal opportunities and educational equity in the prison system.

What Germany needs is a nationwide digital strategy for the prison system that integrates education, IT, and security and creates interoperability. Only when digital education is understood as part of the security strategy can it unfold its full potential: as a driver for rehabilitation, stability in prison, and opportunities for life after imprisonment.

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3.3 Field research

In this chapter, the strengths, weaknesses, opportunities and challenges in the implementation of digital educational environments in Germany are analyzed at an organizational level - based on the assessments of employees at Heinsberg Prison.

The implementation of digital educational environments in prisons offers both opportunities and challenges. One of the main strengths lies in the existing digital infrastructure, in particular the internal prison intranet "Elis", which provides access to educational opportunities and gives prisoners the opportunity for self-directed learning as well as general and vocational training for prisoners. In addition, programmes such as the PERSPEKTIVE project have already been successfully integrated into everyday prison life and support the resocialization of prisoners by successfully using PERSPEKTIVE and the experiential education games approaches developed in this Erasmus+ project as part of the regular sports activities offered with prisoners in Heinsberg Prison (at least three hours per week). These measures have proven to be particularly effective in preparing prisoners for reintegration into the labor market. Another advantage is the qualified specialist staff in the work service, who have the necessary skills through relevant training, for example in prison training or master craftsman qualifications. In addition, there are already links between the staff, specialists and external experts, which creates a solid basis for the further development of digital training programs.

Despite these positive aspects, there are some structural weaknesses that make it difficult to implement digital education. Prisoners do not have direct internet access, which severely restricts the use of modern online learning platforms. In addition, personnel structures are dictated by the state justice administration, which makes it challenging to adapt flexibly to new educational projects. Personnel capacities are influenced by factors such as security level, number of inmates and specific areas of responsibility. Regional differences in the availability of resources and technical equipment also influence the possibilities of digitalization. Direct integration of an online platform is not easily feasible under the current framework conditions.

At the same time, however, digitalization opens up significant opportunities. For example, it could contribute to improved resocialization in the long term by better preparing prisoners for the job market. The further development of the PERSPEKTIVE project as a digital platform could also support staff in their work and help to increase efficiency. Technological advances offer new opportunities for secure and flexible digital learning environments, while cooperation with external training providers could expand the range of training on offer.

Despite this, there are also risks to consider. The high security requirements in prisons significantly restrict digital innovations. Political and financial framework conditions play a key role in implementation and could slow down the process. There is also a risk that there are reservations about new technologies within the institutions, which makes acceptance more difficult. Security checks could significantly delay or even prevent the implementation of digital learning platforms.

Targeted strategies should be developed to ensure the success of digital education programs. Existing structures such as the "Elis" intranet can be used to further expand digital education within prisons. At the same time, alternative solutions should be developed to provide digital learning opportunities for prisoners without direct internet access. Close coordination with the judicial authorities and security officers is essential in order to address concerns at an early stage and speed up the implementation process. In addition, a step-by-step implementation plan should be developed that takes into account technical and personnel restrictions and thus enables the sustainable integration of digital educational opportunities into the prison system.

Chapter 4: Informational level

4.1 Introduction

At the information level, it is about insights into how far-reaching and important online areas have become for social participation and what should be taken into account in measures to bridge the digital divide among people in prison. These insights are valuable in understanding what the focus of DigiFusE should be and what measures will be implemented as part of this project.

The SWOT analysis at informational level is based on the following interview questions (taking into account the SWOT levels of strengths, weaknesses, opportunities and threats):

- What information resources are currently available to the target group, and how effective are they?
- Are there well-established processes for providing information (e.g. legal rights, health services, visitation)?

- How accessible is the information for the target group with different literacy levels or languages?
- Is the target group satisfied with the timeliness and clarity of the information they receive?
- What gaps exist in the current information provided to detainees (e.g. topics not covered, lack of updates)?
- Are there barriers to accessing information, such as language differences, literacy challenges, or limited technology?
- Is the format of the information (e.g. printed materials, verbal communication) effective for all detainees?
- Are there external factors (e.g. policy changes, legal reforms) that might complicate information delivery?
- Do the target group have sufficient digital skills to use the PERPSKEITVE platform?
- Is the fact that (many) people of the target group cannot read, or are not used to reading, a threat to the PERSPEKTIVE platform?
- Can a partnership help provide more comprehensive or specialized information with the PERSPEKTIVE platform?
- Are there opportunities to tailor, by the PERSPEKTIVE platform provided, information to meet the diverse cultural or linguistic needs of the target group?

4.2 Desk research

Information level: Educational content, data, and digital literacy

In this context, the information level refers both to the educational content provided to inmates and to the data and information management aspects of prisons. A key problem highlighted in the literature is access to learning materials.

Access to educational resources and information

In Germany, access to educational resources in prison is severely restricted. Although there are educational opportunities – for example, in Freiburg Prison, which has been offering secondary school qualifications and distance learning courses since the 1970s (Krimpedia, 2024) – digital elements such as e-books, online libraries, or intranet-based learning modules are rare. One example of digital innovation is the ELIS project, which has been used as an e-learning platform without internet access in several federal states since 2009 (Schroeder, 2019).

In North Rhine-Westphalia in particular, ELIS has been used for several years to give prisoners access to school and vocational learning modules via a closed infrastructure. Nevertheless, studies show

that access often remains limited. For example, around 64% of young prisoners enter prison without a school leaving certificate and over 90% without vocational training.

Many need initial vocational training or a full qualification, but digital learning opportunities are only available in isolated cases and not across the board (Ministry of Justice of North Rhine-Westphalia, 2022).

Legally, the “principle of assimilation” forms the basis: According to Section 3 of the Prison Act (StVollzG), life in prison should be as similar as possible to general living conditions (StVollzG, 1976). Today, digital participation is clearly part of this. Berlin, for example, launched a pilot project to give prisoners access to digital educational media via secure devices – based on Section 3 StVollzG Berlin (Criminal Defense Lawyers' Day, 2023). At the same time, the Higher Regional Court of Karlsruhe ruled in 2022 that there is no right to internet access in prisons, as computers pose a significant security risk (OLG Karlsruhe, 2022). This tension between the mandate for rehabilitation and the need for security shapes the German debate.

Participation and engagement in learning

Digital formats open up the possibility of offering prisoners more flexible and attractive learning opportunities – from short modules for remand prisoners to degree programs for long-term prisoners, as research from Belgium and the UK shows (Brosens, 2019; Pike & Adams, 2012). In Germany, these approaches have so far only been tested in pilot projects such as ELIS (Schroeder, 2019).

In North Rhine-Westphalia, the participatory approach is further strengthened by voluntary support services. At Geldern Prison, for example, around 50 volunteers accompany prisoners in counseling sessions, social training courses, and addiction prevention programs. Such services complement formal education and help to promote motivation and commitment to learning (Ministry of Justice of North Rhine-Westphalia, 2022).

The enforcement objective under Section 2 of the Prison Act (StVollzG) obliges institutions to support prisoners in their development and to involve them in the process (StVollzG, 1976). Digital learning systems can support this goal by offering choices, interactive formats, and greater self-control. So far, however, this approach remains fragmented and depends heavily on the commitment of individual institutions.

Digital skills as a learning goal

A serious shortcoming of the German prison system is the lack of systematic programs for teaching basic digital skills. Many prisoners—especially long-term inmates—are affected by digital exclusion, which significantly reduces their opportunities after release (Reisdorf & Rikard, 2018). International studies show that without basic digital literacy, even everyday tasks such as online banking or job applications are difficult to accomplish (Morgan et al., 2025).

The need for basic digital skills is particularly high in North Rhine-Westphalia, as a large proportion of prisoners have little formal education. In addition to reading, writing, and arithmetic, language skills are becoming increasingly important for non-German-speaking prisoners. Although language courses are available, they are not offered in all institutions. Furthermore, access to digital learning resources is often severely limited, which makes it even more difficult to teach basic digital skills (Ministry of Justice of North Rhine-Westphalia, 2022).

A glance at the general educational situation shows that this problem is acute in Germany: according to the Vodafone Youth Study 2023, young people entering the workforce feel poorly prepared for digital working environments, and many schools are still inadequately equipped (Vodafone Foundation, 2023). If even young people in freedom are inadequately trained in digital skills, the gap for prisoners widens massively. Projects such as ELIS could therefore be usefully supplemented by digital literacy courses – from Office basics to email training – but such programs are currently lacking.

Curriculum, content design, and evaluation

The curriculum of the prison system in Germany has traditionally focused on basic education and vocational training, which has been shown to reduce recidivism rates and improve labor market integration (Federal Agency for Civic Education, 2021).

However, university courses and creative forms of learning are rare. Digital media could fill this gap by providing access to university courses, simulations, or adaptive learning programs—similar to the British “Virtual Campus” (Pike & Adams, 2012).

However, obstacles arise from copyright restrictions and licensing costs, which make the use of digital content difficult (Champion & Edgar, 2013). Germany does not yet have a central curriculum library for prisons. Instead, the federal states work in a decentralized manner, which fragments access.

At the same time, digitization offers opportunities for evaluation and feedback: ELIS, for example, integrates progress indicators and feedback functions, which allow learning processes to be better

documented (Schroeder, 2019). Such digital portfolios could serve as an important bridge after release, for example in job applications or follow-up measures.

Desk research also highlights that systematic documentation of learning progress in North Rhine-Westphalia could facilitate closer links with external partners, such as vocational schools, chambers of commerce and industry, and chambers of crafts. This would make it easier to highlight the skills acquired during imprisonment and to tailor transitions to training and work more effectively.

Conclusion – Where does Germany stand?

Germany is still in the early stages of digitally supported prison education. Legal foundations such as Sections 2 and 3 of the Prison Act (StVollzG) provide a clear mandate to promote rehabilitation and adaptation to social conditions. However, so far there have only been isolated projects such as ELIS or pilot projects in Berlin. The next step would be a nationally coordinated strategy: secure intranets in all prisons, systematic digital literacy courses, a national curriculum library, and standardized evaluation tools. Only in this way can digital education in prisons fulfill the requirement of combining rehabilitation and digital participation.

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4.3 Field research

This chapter analyzes the strengths, weaknesses, opportunities and challenges in the implementation of digital educational environments in Germany at an informational level - based on the assessments of employees of Heinsberg Prison, Talentbrücke and EuropeUnlimited, who work with Heinsberg Prison as part of PERSPEKTIVE and sports activities.

The provision of educational and information opportunities for prisoners is an important part of resocialization and social reintegration. Various sources of information are already available in prisons, including daily newspapers, televisions, libraries and teaching and learning materials in various educational levels and several languages. There are also established procedures for communicating essential information, such as legal rights, health services and visiting arrangements. Many inmates comment positively on the timeliness and comprehensibility of this information. In addition, the DigiFusE project offers a promising opportunity to prepare educational content digitally and adapt it to the needs of the inmates.

Despite these strengths, there are some challenges. The existing information formats are not equally accessible to all inmates - people with reading and writing difficulties in particular encounter barriers. Language barriers also make it difficult to access educational opportunities, as not all materials are available in a sufficient variety of languages. In addition, technical equipment is limited and many inmates have little experience in using digital media. Another gap can be seen in the area of basic financial education, which has hardly been part of the educational offerings to date, but plays an important role in the later independence of those released.

Nevertheless, digitalization offers numerous opportunities. Digital platforms such as TRAIANGLE, PERSPEKTIVE and BLEEP enable a more interactive and individualized design of educational content that can specifically address the linguistic and cultural needs of inmates. The integration of digital educational offers could close existing information gaps and facilitate access to education for all. At the same time, improved digital skills would help inmates to better integrate into the labor market and society after their time in prison. Cooperation with external education providers could also expand access to additional teaching materials and digital training.

However, there are also risks to be considered when introducing digital education. As inmates' prior digital knowledge varies greatly, this could lead to unequal use of the services. In addition, there are often technical restrictions in prisons that make smooth implementation difficult. Resistance to change within the prison education system could also slow down the process. Security-related

requirements and limited financial resources could also hinder the implementation of digital projects.

Targeted strategies should be developed in order to successfully establish digital education programs in prisons. Existing information sources and structures can be used to meaningfully expand digital content and make it more accessible. In particular, language and educational barriers should be broken down by offering materials in several languages and easy-to-understand formats. Close cooperation with the judicial authorities and prisons or other closed care facilities is essential in order to identify and resolve technical and security-related challenges at an early stage. Also, training measures should be offered for both teaching staff and prisoners in order to promote digital skills and increase the acceptance of new educational formats.

The strategic and targeted implementation of digital education offers could not only improve learning opportunities in prisons in the long term, but also increase the chances of prisoners successfully reintegrating into society.

Chapter 5: Technical level

5.1 Introduction

In almost every country, the technical digital system is the biggest complication for an educational environment. They are designed for security, have no connection to the outside world, are very limited in their functions and are simplified. In our research, we can learn from existing practices and technical solutions. However, implementing these in closed institutions such as prisons remains a challenge, as the field analysis has shown and is presented in the following chapters.

The SWOT analysis at technical level is based on the following interview questions (taking into account the SWOT levels of strengths, weaknesses, opportunities and threats):

- What existing systems (e.g. software, hardware, networks) are currently in place?
- How reliable and scalable are these systems?
- Do the current systems have strong support and maintenance structures?
- Are there robust data security and privacy measures already implemented?
- Do the current systems lack features or functionalities?
- Are there any known performance issues (e.g. slow processing, limited capacity) with the current systems?
- How dependent is the organization on external vendors or third-party systems?
- Are there any skill gaps in the team for operating or managing the existing systems?

- Can existing systems be upgraded or modified to better meet the project's requirements?
- Are there funding opportunities or grants available for implementing new systems to better further develop the project?
- Can the target group still use the system after they get back in society? Why and how?
- What issues can we include in the PERSPEKTIVE platform for the target group, so that they continue to use the PERSPEKTIVE platform when they are outside and released of the prison?
- Are the existing systems outdated or incompatible with the PERSPEKTIVE platform requirements?
- Are there risks of losing support for legacy systems or tools currently in use within the PERSPEKTIVE platform?
- How might regulatory changes or compliance requirements impact the technical aspects of the PERSPEKTIVE platform?

5.2 Desk research

Technological level: infrastructure, tools, and security aspects

The technological level deals with the physical and software-based tools that enable digital education in prisons. In Germany, it is becoming increasingly apparent how this level—consisting of infrastructure, tools, and security aspects—is a key factor when it comes to establishing digital education and rehabilitation in the prison system. While initial pilot projects are already showing that digital resources can be used in prisons, implementation remains fragmented and depends heavily on the framework conditions in the individual federal states.

In North Rhine-Westphalia, for example, in addition to pilot projects at the federal level, the nationwide ELIS system is being used in particular. It enables prisoners to access digital learning modules covering school and vocational education via a closed, secure infrastructure. At the same time, experience in North Rhine-Westphalia shows that access remains severely restricted by restrictive security protocols, which means that learning opportunities often do not meet social standards (BMAS/ESF, 2019; Ministry of Justice of North Rhine-Westphalia, 2022).

Legal framework and enforcement principles

The Prison Act (StVollzG) forms the basis under federal law for the enforcement of prison sentences and other measures involving deprivation of liberty. The purpose of enforcement (§ 2 StVollzG) stipulates that the enforcement of prison sentences should enable prisoners to lead socially responsible lives without committing crimes in the future. The principle of assimilation (Section 3

StVollzG) also requires that life in prison be brought into line with general living conditions as far as possible. Digital participation, which is now taken for granted in society, must therefore also be taken into account in the prison system (gesetze-im-internet.de, 2024). In addition, Sections 179–182 StVollzG contain detailed regulations on the collection, processing, and use of personal data, which are also of central importance when using digital systems in prisons (haufe.de, 2024). These legal requirements create a framework in which technological innovations are conceivable, without, however, granting an unrestricted right to digital equipment or internet access.

Existing pilot projects and infrastructure measures

The Prison Act (StVollzG) forms the basis under federal law for the enforcement of prison sentences and other measures involving deprivation of liberty. The purpose of enforcement (§ 2 StVollzG) stipulates that the enforcement of prison sentences should enable prisoners to lead socially responsible lives without committing crimes in the future. The principle of assimilation (Section 3 StVollzG) also requires that life in prison be brought into line with general living conditions as far as possible. Digital participation, which is now taken for granted in society, must therefore also be taken into account in the prison system (gesetze-im-internet.de, 2024). In addition, Sections 179–182 StVollzG contain detailed regulations on the collection, processing, and use of personal data, which are also of central importance when using digital systems in prisons (haufe.de, 2024). These legal requirements create a framework in which technological innovations are conceivable, without, however, granting an unrestricted right to digital equipment or internet access.

Existing pilot projects and infrastructure measures

Several pilot projects are already underway in Germany to test digital technologies in prisons. Since 2018, Heidering Prison has been running a project called “Resocialization through Digitalization.” Prisoners there can use tablets to write job applications, view job boards, or access selected websites. Internet access is provided exclusively via whitelists that only allow verified content, and the tablets are secured via a separate Wi-Fi network (fokus.fraunhofer.de, 2018).

In Baden-Württemberg, the pilot project “Prison Cell Media Systems” has also been trialed since 2024. Here, prison cells are to be equipped with computers that enable secure and controllable applications such as telephony, internet access, films, music, e-learning, or pastoral care. Particular emphasis is placed on the need to ensure high security standards (landtag-bw.de, 2024).

In Berlin, pilot projects have also been launched that allow limited internet access in selected institutions such as the Lichtenberg Prison. Here, inmates can use certain applications via special terminals, with security and control also being a priority in this case (deutschlandfunknova.de, 2022).

These examples illustrate that concepts such as in-cell devices, intranet solutions, or controlled access to educational content are not just theoretical models in Germany, but already proven practices.

North Rhine-Westphalia is also participating in such developments. In addition to school and vocational training programs in institutions such as the Geldern and Bochum-Langendreer prisons, ELIS is being used to support digital learning processes. At the same time, studies show that over 90% of young inmates enter the system without having completed vocational training, and 64% have no school-leaving qualifications. Digital learning opportunities could build a bridge for this group in particular – but restrictive security requirements and limited infrastructure mean that access remains limited (see Ministry of Justice of North Rhine-Westphalia, 2022).

Challenges: infrastructure, connectivity, security

The implementation of digital education programs in prisons in Germany is associated with considerable infrastructural challenges. Many prisons are housed in buildings that are not designed for modern IT infrastructure. Network cables, power outlets, and secure server connections often need to be retrofitted, which requires high investments (staatsanzeiger.de, 2023).

Furthermore, ensuring security is one of the biggest challenges. The pilot projects in Heidering and Baden-Württemberg show that digital services can only be implemented under strict access control. This includes whitelists, monitored internet use, restricted applications, and continuous logging (landtag-bw.de, 2024). Ensuring data protection and data security within the framework of Sections 179–182 of the Prison Act (StVollzG) is also a key requirement. At the same time, support, maintenance, and technical assistance for the systems are necessary to maintain the services in the long term.

In North Rhine-Westphalia in particular, a lack of comprehensive equipment and restrictive use of digital devices are causing “digital exclusion” for many prisoners. Even when ELIS is technically available, access remains severely restricted due to strict security protocols, which reduces opportunities for digital education (Reisdorf & Jewkes, 2016).

Comparison with international approaches

Compared to international developments, Germany is lagging behind in some areas. While in-cell devices, intranet solutions, and tablets are already being tested, the use of advanced technologies such as learning management systems, adaptive learning software, or even virtual reality in the prison system is not yet known. German pilot projects are mainly limited to basic services such as job

application training, access to job exchanges, or e-learning in standardized formats. Future visions such as immersive learning environments or AI-supported adaptations to individual learning needs have not yet been implemented (fokus.fraunhofer.de, 2018; landtag-bw.de, 2024).

Integration with legal requirements, data protection, and monitoring

The integration of digital technologies into the prison system requires close adherence to the legal framework. Data protection and data security are strictly regulated under Sections 179–182 of the Prison Act (StVollzG) and require technical and organizational measures. In addition, individual state prison laws contain specific provisions, such as Section 51 of the Mecklenburg-Western Pomerania Prison Act, which regulates the approval of information and entertainment electronics subject to security-related restrictions (gesetze.co, 2024). This results in a clear tension between the principle of harmonization, which calls for digital participation, and the interest in security, which requires restrictive control mechanisms.

Assessment and prospects

Previous projects show that digital technologies can be used in prisons and can significantly expand educational opportunities. However, these projects have so far been organized on a local and pilot basis, so there is no question of comprehensive digitization. While basic infrastructure such as Wi-Fi networks and in-cell devices have been introduced in individual facilities, the modernization of all institutions involves considerable financial and organizational effort. In addition, there is still a conflict between the goal of rehabilitation and security concerns, which requires a uniform federal strategy (landtag-bw.de, 2024; deutschlandfunknova.de, 2022).

The perspective from North Rhine-Westphalia makes it clear that technical equipment alone is not enough. Only the combination of infrastructure with educational concepts – such as IHK/HWK-recognized vocational training, language courses, and socio-educational programs – makes it possible to exploit the potential of digital systems for rehabilitation. The technical level must therefore always be considered in close coordination with the organizational and informational levels.

Conclusion – Where does Germany stand?

Developments in the German prison system to date show that digital technologies are both legally and practically feasible, provided that security aspects are adequately taken into account. However, the nationwide expansion of such projects requires considerable investment in infrastructure, clear

standards for data protection and security, and a coordinated education policy. A strategic recommendation would therefore be to systematically expand pilot projects, develop nationwide minimum standards for digital systems in prisons, and integrate digital skills training more strongly into rehabilitation concepts. On this basis, more advanced technologies such as adaptive learning systems or immersive educational formats could also be introduced in the long term.

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5.3 Field research

This chapter analyzes the strengths, weaknesses, opportunities and challenges of implementing digital educational environments in Germany at an informational level - based on the assessments of employees at Heinsberg Prison and the WHKT, which is responsible for implementing the PERSPEKTIVE platform while taking data protection and security regulations into account.

As part of the DigiFusE project, the technical requirements and challenges for the integration of digital education in prisons were examined. Due to security measures, Heinsberg Prison was unable to disclose any detailed information about the technical and digital infrastructure of the prison. This also applies to information on the reliability, scalability and specific functionalities of the existing systems.

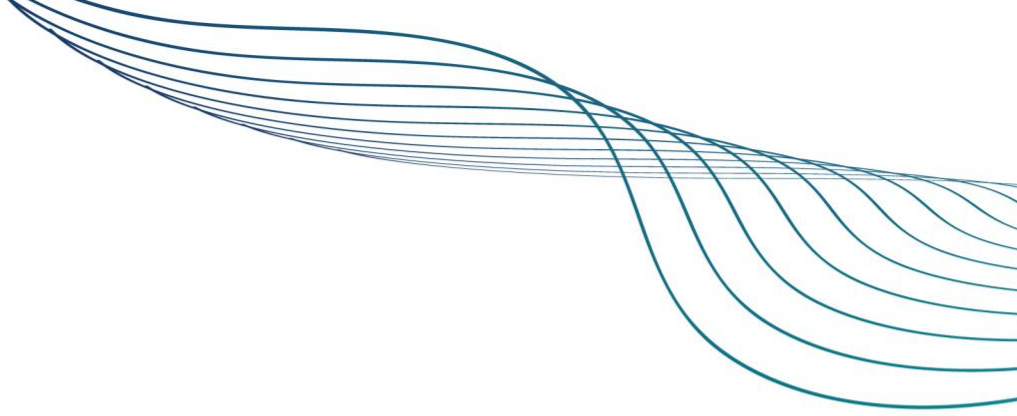
The WHKT has a modern IT infrastructure with up-to-date hardware and software, a reliable security system and continuous maintenance. In a further benefit, employees are well trained and data protection is consistently observed. As the PERSPEKTIVE platform functions independently of third-party providers, it has a stable technical basis for its operation. A particularly positive aspect is that former prisoners can continue to access the content online after their release, which supports their professional reintegration.

In contrast, many aspects of the prisons, such as Heinsberg Prison, remain unclear. For security reasons, no information is published about the available IT equipment, system reliability or data protection practices. The lack of internet access for inmates is the biggest technical hurdle, as this would be essential for the use of digital education platforms. Furthermore, there is no external funding, meaning that all investments would have to be covered by the respective budgets.

Despite these challenges, there are opportunities: for example, secure, internet-free access could be created via an internal network (intranet) that makes the digital education platform usable in a controlled manner. Such solutions could initially be tested in pilot projects and expanded if successful. The long-term use of the platform after the prison term also offers great potential for promoting career prospects.

At the same time, there are considerable risks. The general reservations about transparency in prisons make the strategic development of digital educational offerings more difficult. Without technical openness, financial resources and suitable security concepts, the benefits of such platforms remain unused - especially if Internet access remains permanently prohibited.

Overall, the technical analysis shows that the starting position for the implementation of digital educational environments is very different. While the WHKT is prepared to make digital content



widely available, implementation within prisons requires creative, secure and politically supported solutions.

DigiFuse

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