

JailGuardian

Professional and Social Aspects of Computer Science

2023/2024

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Context

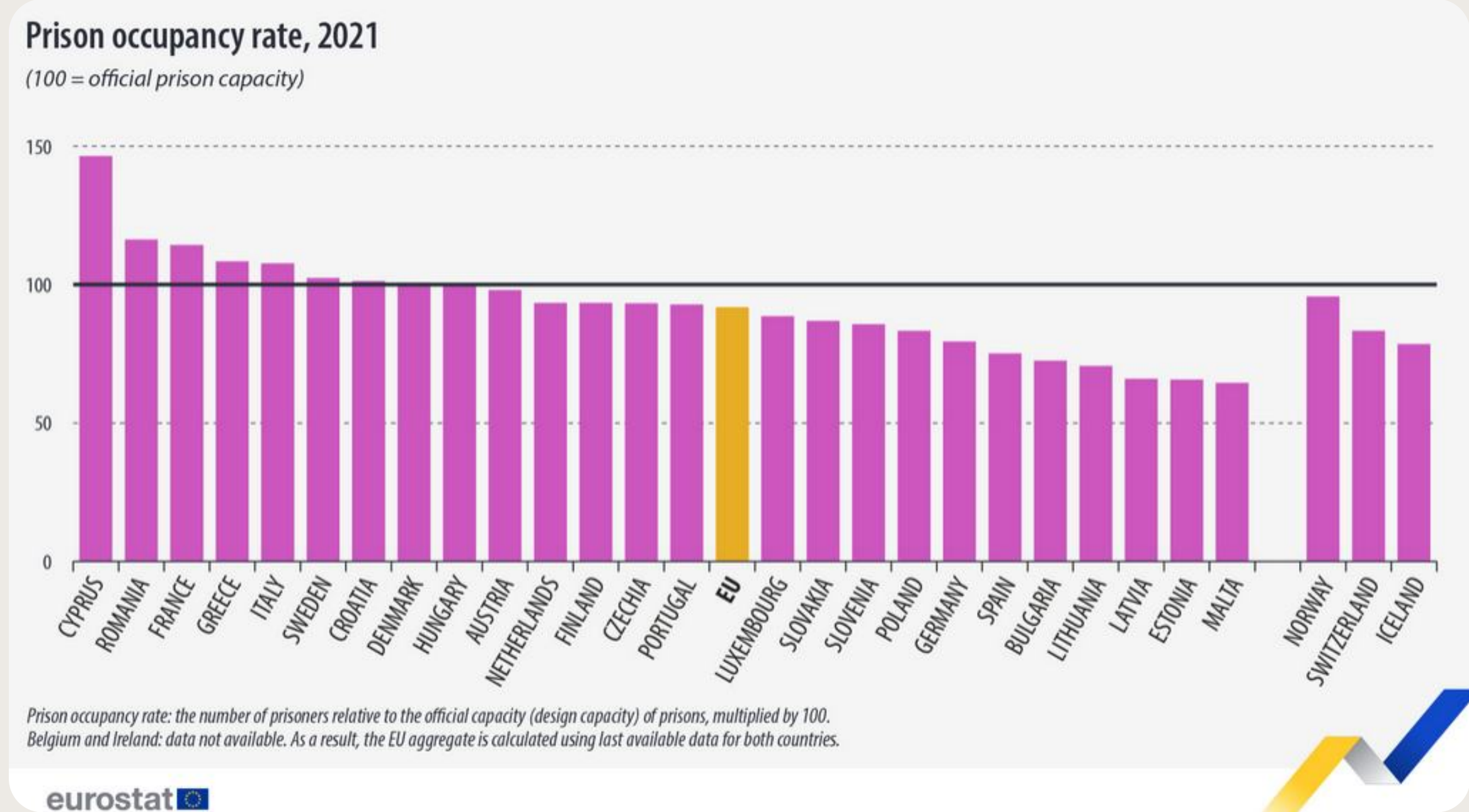
Overcrowded prisons

At the end of the year 2022, there were a total of 981,575 inmates distributed among the 48 Prison Administrations (PAs) of the Council of Europe member states that participated in the SPACE I survey.

[1][2]

Delayed data analysis

The most recent statistical data on prisons dates back to 2022, and we still do not have information available for the year 2023.



Features

Create and manage inmates activities	Map inmates to their cells	Manage contacts between lawyers and inmates	Manage visits to inmates, scheduling, etc.
Keep track of an inmate's behavior	Record incidents inside the prison	Get statistics about inmates' committed crimes	Allow judges and courts to enforce lawful interception and get access to this data system

Actors

Prison Guard



Police officer that takes care of the whole prison structure. Update inmate information, record incidents

Prison Warden



The prison director, that controls every action. Defines system access levels and policies

Inmate



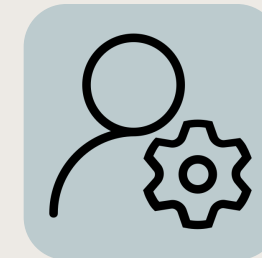
Person that committed a crime and thus takes part of the prison. Limited access to personal information

Developer



Responsible for developing and maintaining the system





Administrators



Responsible for administering, managing, and ensuring the correct usage of the system

Collected Data

People

<div>Warden</div> <div></div> <div>Citizen Card ID Name Age Address Phone number Email</div>	<div>Inmate</div> <div></div> <div>Citizen card ID Name Age Committed crime Behavior over time List of incidents</div>	<div>Guard</div> <div></div> <div>Citizen Card ID Name Age Address Phone number Email Assigned zone</div>	<div>Visitor*</div> <div></div> <div>Citizen card ID Name Relationship to inmate</div>
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* Deleted data after the inmate gets free

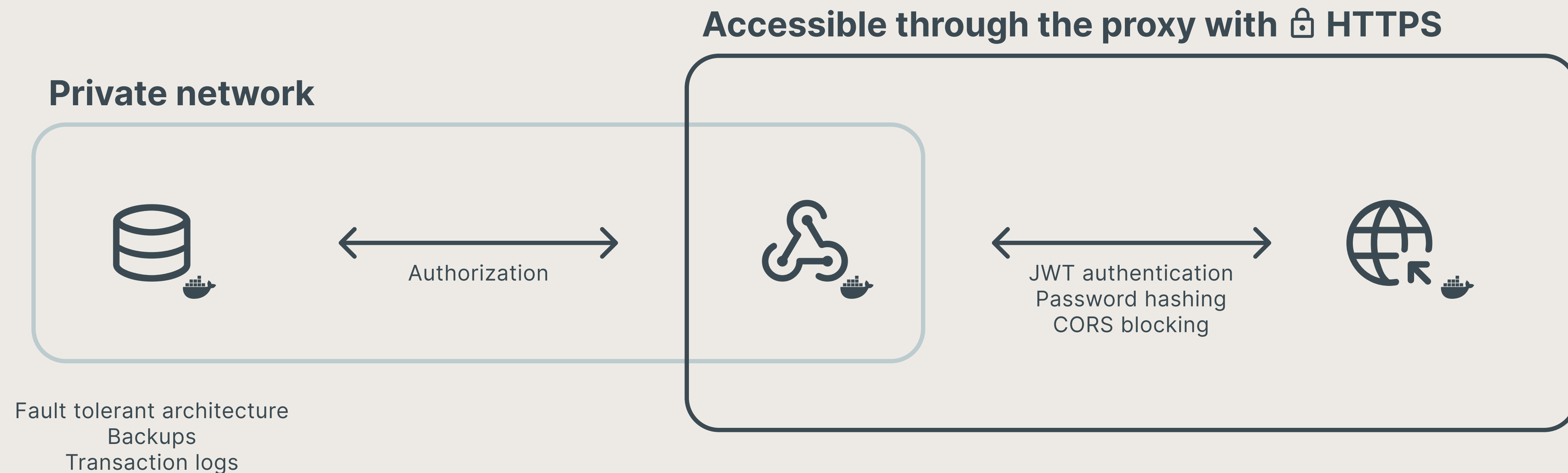
Collected Data

Other things

Visit* Inmate Visitor(s) Purpose Start datetime End datetime	Activity* Participating inmates Creator / manager guard	Incident* Inmate Date Location Severity
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* Deleted data after the inmate gets free

Architecture

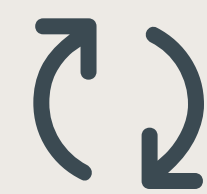


Security & Privacy

- Encrypted data
- Self-hosted data system
- Regular backups
- Access Control
- Data Integrity
- Physical Security
- ISO 27000 family

- GDPR compliant
- Required consent
- No data sending to other companies or institutions
- Transparent data collection

Backup Management



Data replication

Across all EU countries



Daily local backups

With transaction logs since the last backup



High reliability

Self restore either from backups or servers

Access Control

Physical Access

- Access control is done through fingerprint recognition;
- The entire perimeter of the facilities is monitored by surveillance cameras;
- The cameras are monitored by a group of people 24/7;

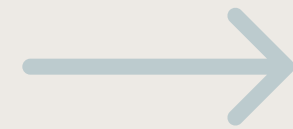
Logical access

- Role Based Access Control (RBAC);
- Visitors, lawyers, and judges do not have direct access to the system. They are required to submit a formal request for the specific data they need;
- All accesses are logged and recorded.

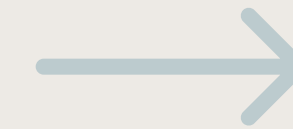
Lawful Interception



The judge or lawyer requests access to a certain data related to an inmate



The system's Data Protection Officer approves the request



The required data (and no other) is available to the judge or lawyer

GDPR General Data Protection Regulation

- **Article 5** - Principles relating to processing of personal data;
- **Article 6** - Lawfulness of processing;
- **Article 9** - Processing of special categories of personal data;
- **Article 15** - Right of access by the data subject;
- **Article 16** - Right to rectification;
- **Article 17** - Right to erasure ('right to be forgotten');
- **Article 24** - Responsibility of the controller;
- **Article 25** - Data protection by design and by default
- **Article 32** - Security of processing;
- **Article 33** - Notification of a personal data breach to the supervisory authority;
- **Article 35** - Data protection impact assessment
- **Article 44** - General principle for transfers

Limitations



Technological Infrastructure



International Cooperation



Data Security



Data Management

Video

Target



European Commission



Government authorities and
law enforcement agencies

Goals

Show the current context	Advertise features	Explain the system concept
Show our commitment to maximum data security	Show the benefits of our system	Make a call to action

Thank you!



References

- Eurostat. EU prisons in 2021: populations & overcrowding, 12 may 2023. Last accessed 23 March 2024; [1]
- Marcelo F. Aebi, Edoardo Cocco & Lorena Molnar. Prisons and Prisoners in Europe 2022: Key Findings of the SPACE I survey, 26 june 2023 . Last accessed 23 March 2024; [2]
- GDPR - General Data Protection Regulation;