Enabling Sovereign, Secure AI Services at National Scale

Telekom Slovenije

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TelekomSlovenije

AI as a strategic driver in Telekom Slovenije

Artificial intelligence (AI) is playing an increasingly crucial role in the digital transformation of companies. Across various business domains, organizations are striving to leverage new technologies not only to increase revenues but also to reduce operational costs and improve overall efficiency.

At Telekom Slovenije, we are gradually and systematically introducing AI into different segments of our business operations, recognizing its potential to drive innovation, optimize processes, and create new value for both the company and our customers.

The process of implementing AI is significantly shaped by both European Union and Slovenian legislation, which set the regulatory framework for responsible and ethical use of advanced technologies. In recent times, geopolitical developments have also become an important factor, influencing how companies approach data security, technological sovereignty, and compliance with international standards. As a result, our approach to AI adoption is not only technologically driven but also aligned with legal requirements and global trends, ensuring that our digital transformation is robust, secure, and future-oriented.

EU data storage and processing outside the EU

- **GDPR Requirements**

  The GDPR applies to all personal data of EU residents, even when stored or processed outside the EU. Transfers are allowed only if the destination ensures “adequate” protection, as defined by the European Commission. Otherwise, companies must use safeguards like Standard Contractual Clauses or obtain explicit consent.

- **Data Localization and Sovereignty**

  While GDPR doesn’t mandate EU-only storage, it restricts transfers to countries without adequate protection. Some member states, like Slovenia (ZVOP-2, Article 23), require sensitive data to stay within national borders. This supports digital sovereignty and protects critical public sector data.

- **EU Data Act (2025)**

  Effective from September 2025, the EU Data Act strengthens user rights and applies to all digital services in the EU, even from non-EU providers. It introduces rules for data access, sharing, and switching between cloud providers, ensuring user control and legal compliance.

EU AI Act

The EU AI Act is the first global law regulating artificial intelligence. It ensures safe, transparent, and human-centric AI use while preventing misuse.

- **High-Risk Systems:**
  Strict rules apply to AI in sensitive areas. Providers must manage risks and ensure oversight. This protects safety and rights.

- **Human Rights & GDPR:**
  AI must respect privacy and dignity. Impact must be assessed and documented.

- **Explainability:**
  AI decisions must be understandable. Transparency builds trust and oversight. Especially vital for high-risk systems.

- **Prohibited Practices:**
  Some AI uses are banned outright. This includes biometric profiling and exploitation. Ethics and safety are prioritized.

- **Risk-Based Framework:**
  AI is regulated by risk level. Higher risk means stricter rules. Low-risk AI faces minimal limits.

ISO/IEC 42001

ISO/IEC 42001 is the world's first international standard for establishing and managing an Artificial Intelligence Management System (AIMS). It helps organizations ensure the safe, ethical, and reliable use of AI by providing a structured framework for governance and risk management.

- **AI Management System:**
  The standard guides organizations in setting up policies and procedures for responsible AI use.
  It covers the entire AI lifecycle—from design to deployment and retirement.
  This ensures AI systems remain effective, compliant, and continuously improving.
- **Risk and Ethics:**
  ISO/IEC 42001 emphasizes identifying and managing AI-related risks, such as bias and privacy concerns.
  It requires organizations to address ethical issues and maintain transparency in AI operations.
  This builds trust and supports compliance with laws like the EU AI Act and GDPR.
- **Leadership and Accountability:**
  Top management must support AI governance and allocate necessary resources.
  Clear roles and responsibilities are defined for ethical and legal AI use.
  Ongoing monitoring and improvement are required to adapt to new risks and regulations.

EU Initiatives for AI Sovereignty

- **HPC (High-Performance Computing, e.g., Vega):**
  The EU is building a network of supercomputers like Vega to support advanced AI research and innovation.
  These systems provide the computational power needed for training large AI models and processing big data.
  They are a foundation for Europe's ambition to achieve technological independence in AI.

- **LLMs4EU:**
  This initiative develops large language models tailored to European languages and values.
  It aims to strengthen Europe's position in generative AI by supporting multilingualism and ethical standards.
  The project brings together leading research institutions and industry partners across the EU.

- **IPCEI (Important Projects of Common European Interest):**
  IPCEI supports the creation of a federated European cloud and edge infrastructure for AI.
  It enables secure, low-latency data processing and real-time AI applications for industry and public services.
  The initiative is key to building a resilient and competitive European digital ecosystem.

Slovenian legislation and sovereignty initiatives

ZVOP-2, Article 23

- **Slovenia's Personal Data Protection Act (ZVOP-2)** implements the GDPR and introduces additional national requirements for data processing. Article 23 sets strict limitations on storing certain personal data outside Slovenia, reinforcing digital sovereignty and compliance
- **Scope of Data Storage Restrictions**:
  The law applies to information systems processing personal data in sensitive domains.
  These include internal administrative affairs, financial administration, citizenship, intelligence and security, defense, healthcare, and mandatory health insurance.
  It also covers exercising rights from public funds, as well as criminal and misdemeanor records.
- **Purpose and Impact**:
  The restrictions are designed to protect national interests and ensure data residency within Slovenia.
  They help safeguard critical data from foreign influence and support compliance with both Slovenian and EU regulations.
  This approach strengthens trust in public sector digital services and underpins national digital sovereignty.

Thank you for your attention.

Looking forward to your thoughts and questions at the end of the presentation.

Digital Sovereignty

Data Sovereignty

Full control over data processing, storage, and access within the national border

Compliance with Regulations

ZVOP-2 and the EU AI Act

Independence from Foreign Providers

Local architecture, Open Source Software use

OpenShift and Zero Trust

OpenShift as a Foundational Platform

Ideal for sovereign AI services

Zero Trust Architecture

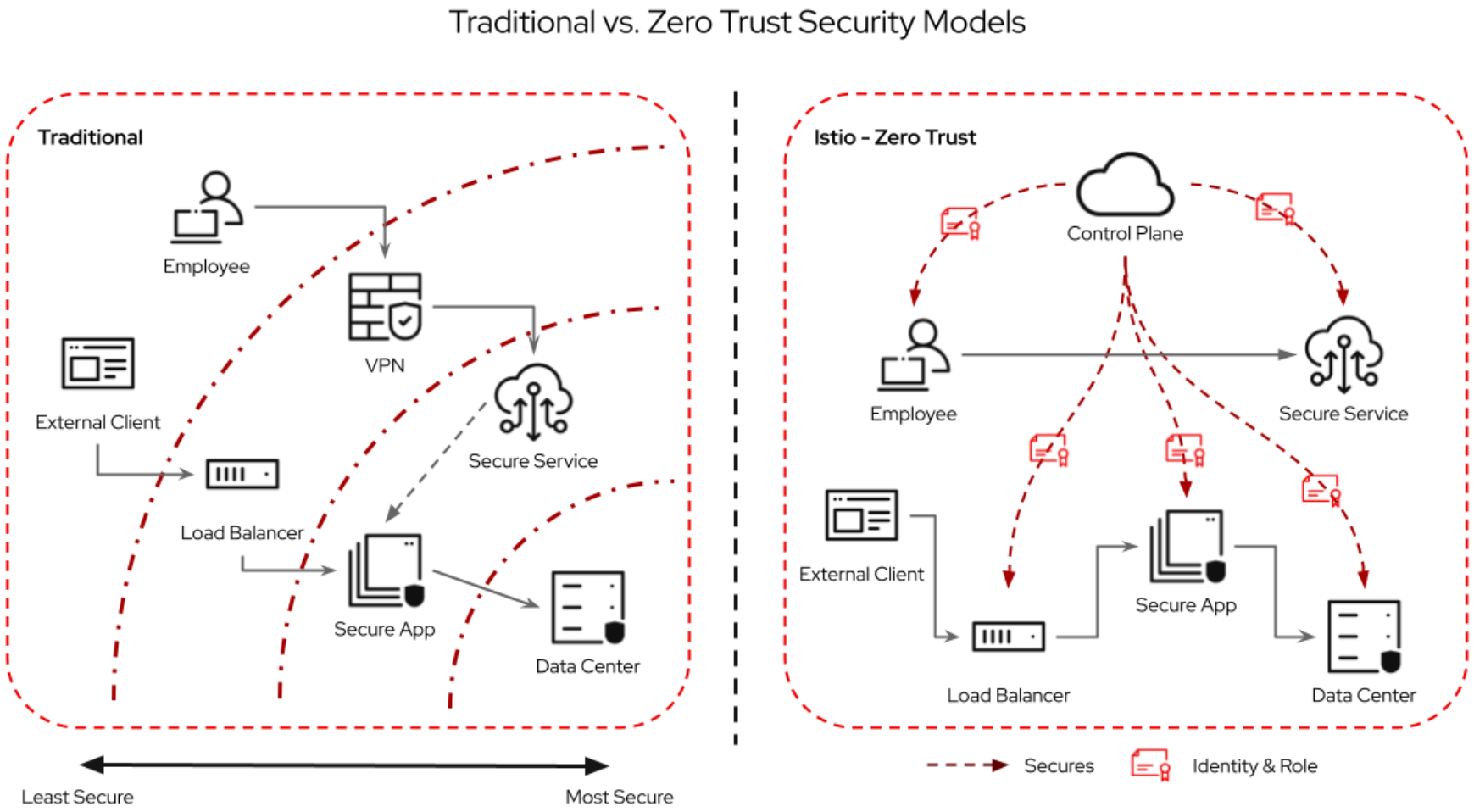
Multi-factor authentication, network segmentation, RBAC

Container Orchestration for Scalability

Compliance with Digital Sovereignty

Ensuring European digital sovereignty and security requirements

Traditional vs Zero Trust



Open Source as the Foundation of Sovereignty

Digital Sovereignty with open-source

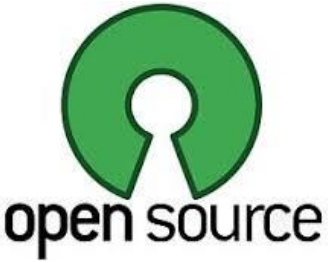
Transparency

Telekom Slovenije‘s use of open-source software

Openshift, Grafana, Linux, ai libraries

Open-source Ai Transparency

Guardrails, grounding, accuracy monitoring.



Current Projects and Future steps

AI Infrastructure Development

Hybrid, scattered

Ongoing AI Projects

In-house, external

Future Expansion and Compliance

Centralization, upskilling of staff, certifications

Ongoing AI Projects

NEO Smartbox

- Neo remote
- Voice recognition and control
- Content tags
- Smarthome integration
- Competitive advantage
- Alexa+google asistant integration

Automatic subtitle generation

- Most local TV programmes + some more popular ones

Small-scale Ai project

- PIXLI service - Catch-up TV feature for Smart rewind
- UI Program izobraževanj - Ai powered education catalog
- Maks – Customer Support Digital Assistant
- „Mojster“ service with an Ai Field Service Assistant „Franc“

Best Practices

Internal Ai hackathon

Copilot with VScode integration

Gitlab Duo

Annual Hackathon

- Ideation from personal challenges

- Onboarding asistant
- Ai mentor
- Call center simulator

Thank you All !

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