CYBER SECURITY COOPERATION (IN ESTONIA)

Jaan Priisalu

Topics

1. History of cyber cooperation
2. What we defend?
3. Government's role
4. What is different
5. The future of SCADA

Internet is a network

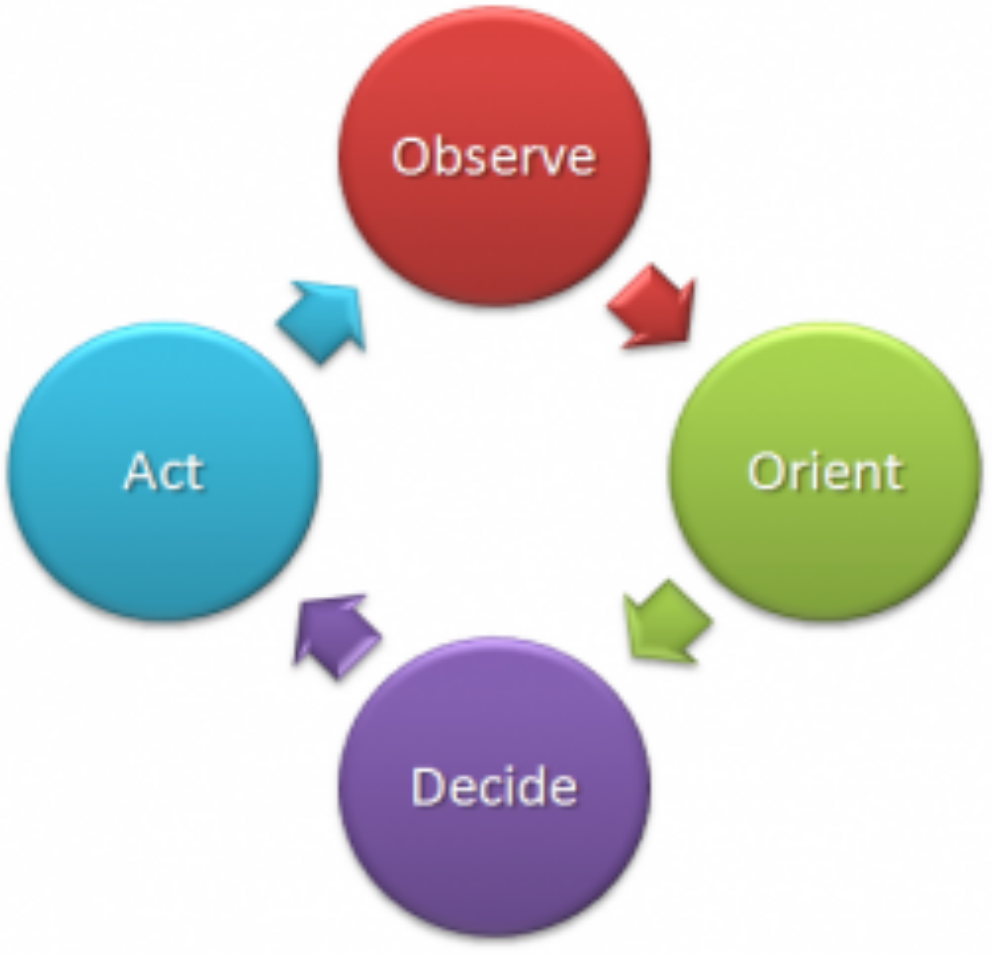
computers

networks

people

Feedback

Control loop
should close



Allikas: http://lesleym100.wordpress.com/

Historical milestones

Institute of Cybernetics
1998 – Cooperation of banks
2000 - Digital Signature Law
2003 – Cybercrime Industry
2005 - E-voting
2006 - CERT-EE
2007 - “Bronze riots“
2008 - NATO Cooperative Cyber Defence COE
2008 - National Cyber-Security Strategy
2009 - Cyber Defence subunits
2011 - Cyber Defence Unit
2012 – Cabinet level excercise

Way of Life

Defending an e-way of life

E-stonia – a balanced demand and supply of e-services from private and public sector

E-solutions widely in use and dependable

- 99% of banking
- 92% tax declarations
- M-parking
- Ca 1,148,000 national ID cards issued
- Sign and encrypt documents using E-ID
- E- & M-voting
- National Electronic Health Records
- Public transport ID-ticket, ID-fishing licenses etc etc

Defending automation

State

Organization

Community

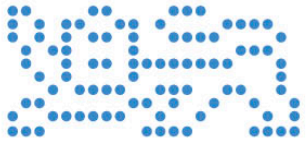
Person

Infrastructure

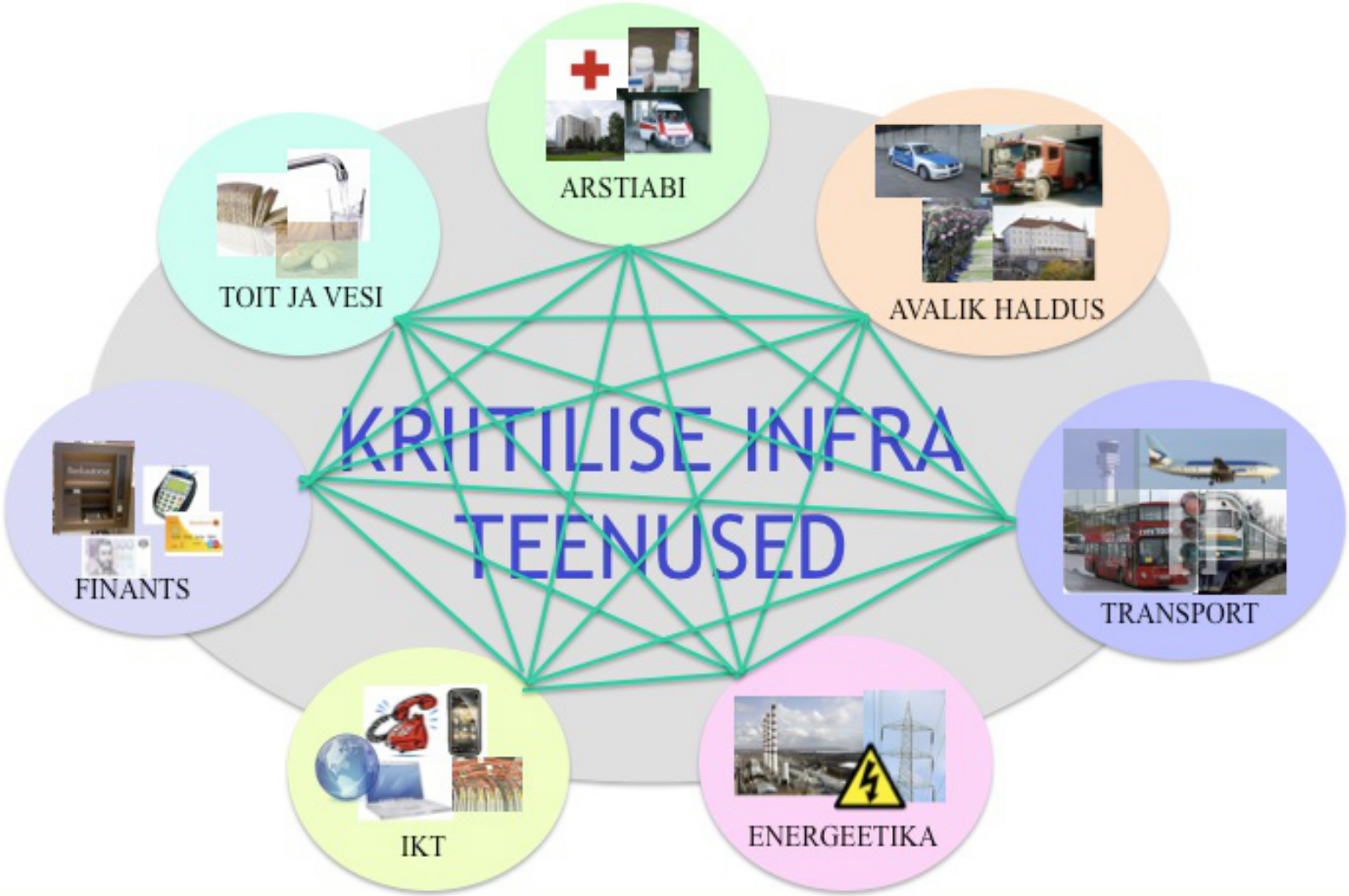
Process

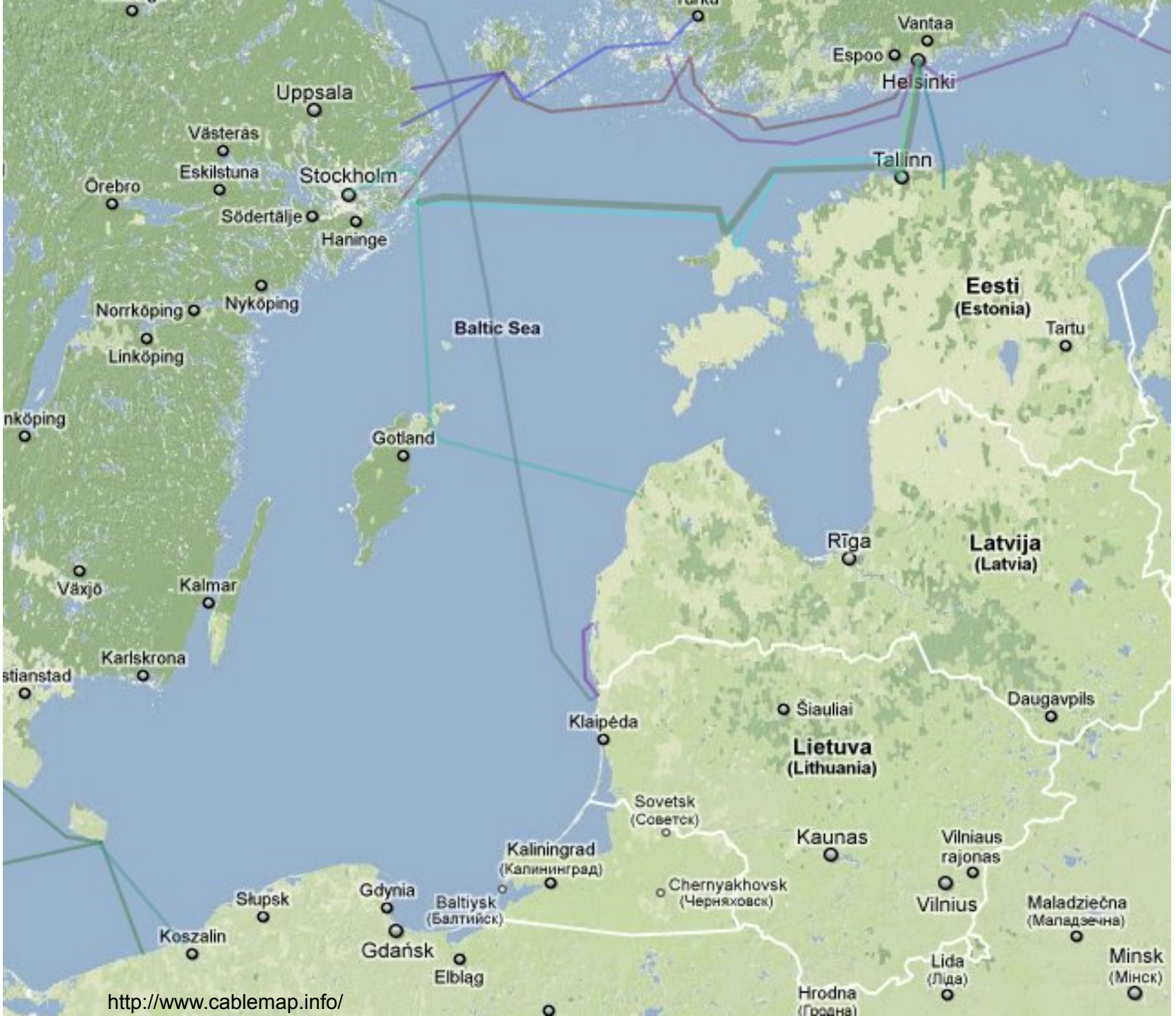
Culture

Hygiene



Critical Infrastructure




Vantaa
Espoo
Helsinki
Uppsala
Västerås
Eskilstuna
Stockholm
Örebro
Södertälje
Haninge
Tallinn
Nyköping
Norrköping
Linköping
Baltic Sea
Eesti
(Estonia)
Tartu
Gotland
Rīga
Latvija
(Latvia)
Växjö
Kalmar
Karlskrona
Šiauliai
Daugavpils
Klaipėda
Lietuva
(Lithuania)
Sovetsk
(Советск)
Kaunas
Vilniaus
rajonas
Kaliningrad
(Калининград)
Chernyakhovsk
(Черняховск)
Vilnius
Maladziečna
(Маладзечна)
Słupsk
Gdynia
Baltiysk
(Балтийск)
Koszalin
Gdańsk
Elbląg
Lida
(Ліда)
Minsk
(Мінск)
Hrodna
(Гродна)
http://www.cablemap.info/

Triangle of Critical Infrastructure

Communications

Data

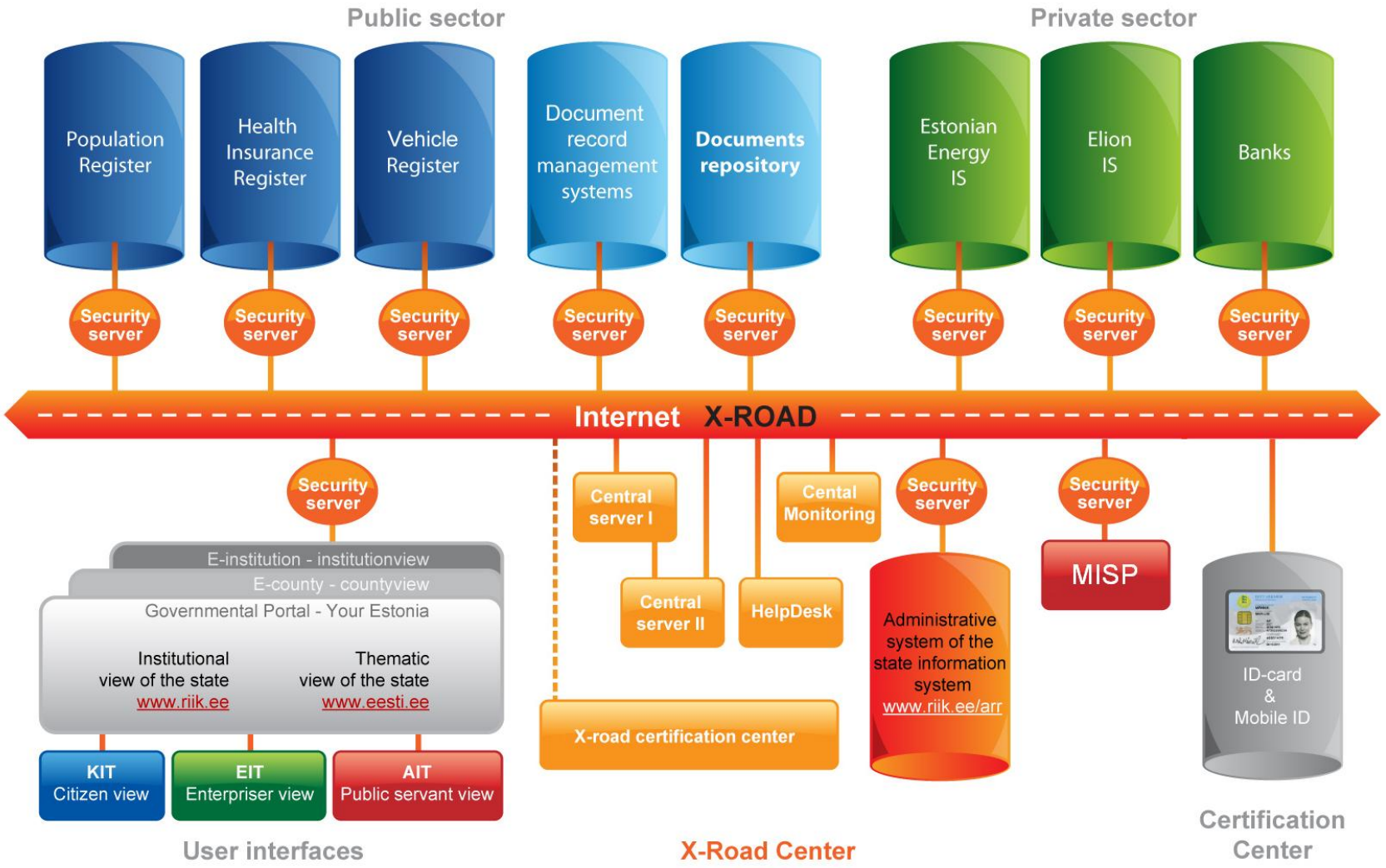
Dependability

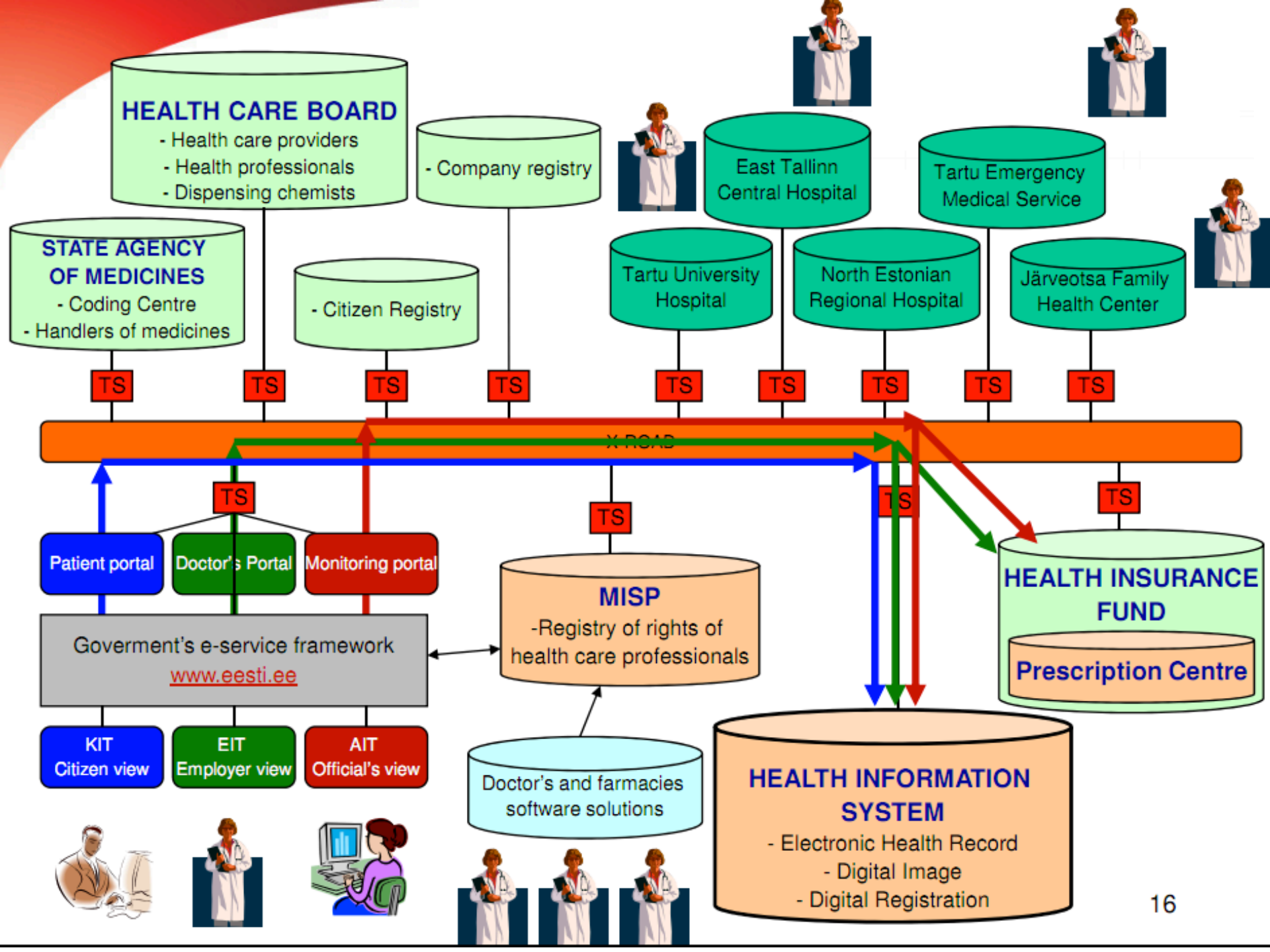
95% depending

30% critical

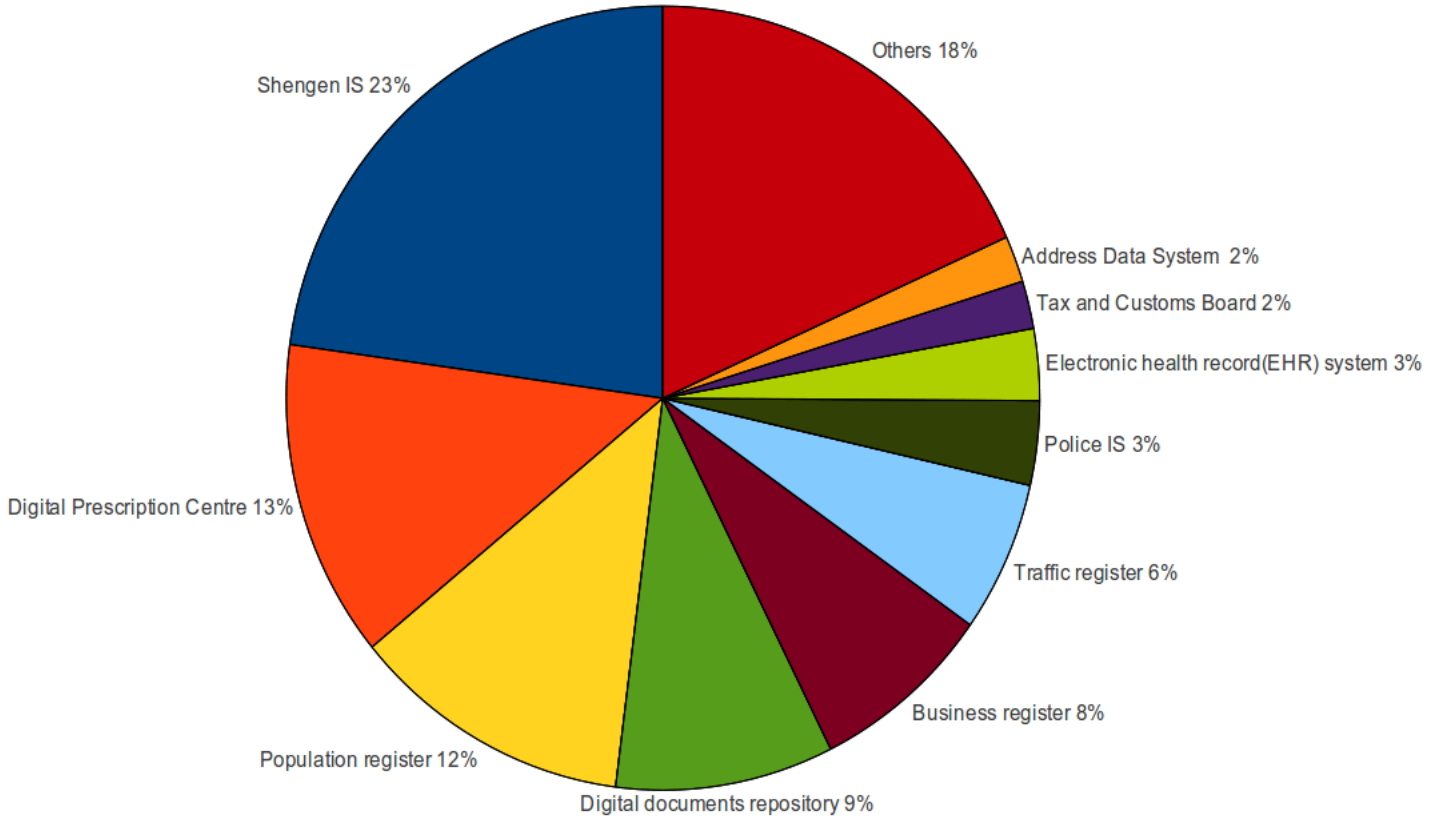
10% no low tech backup

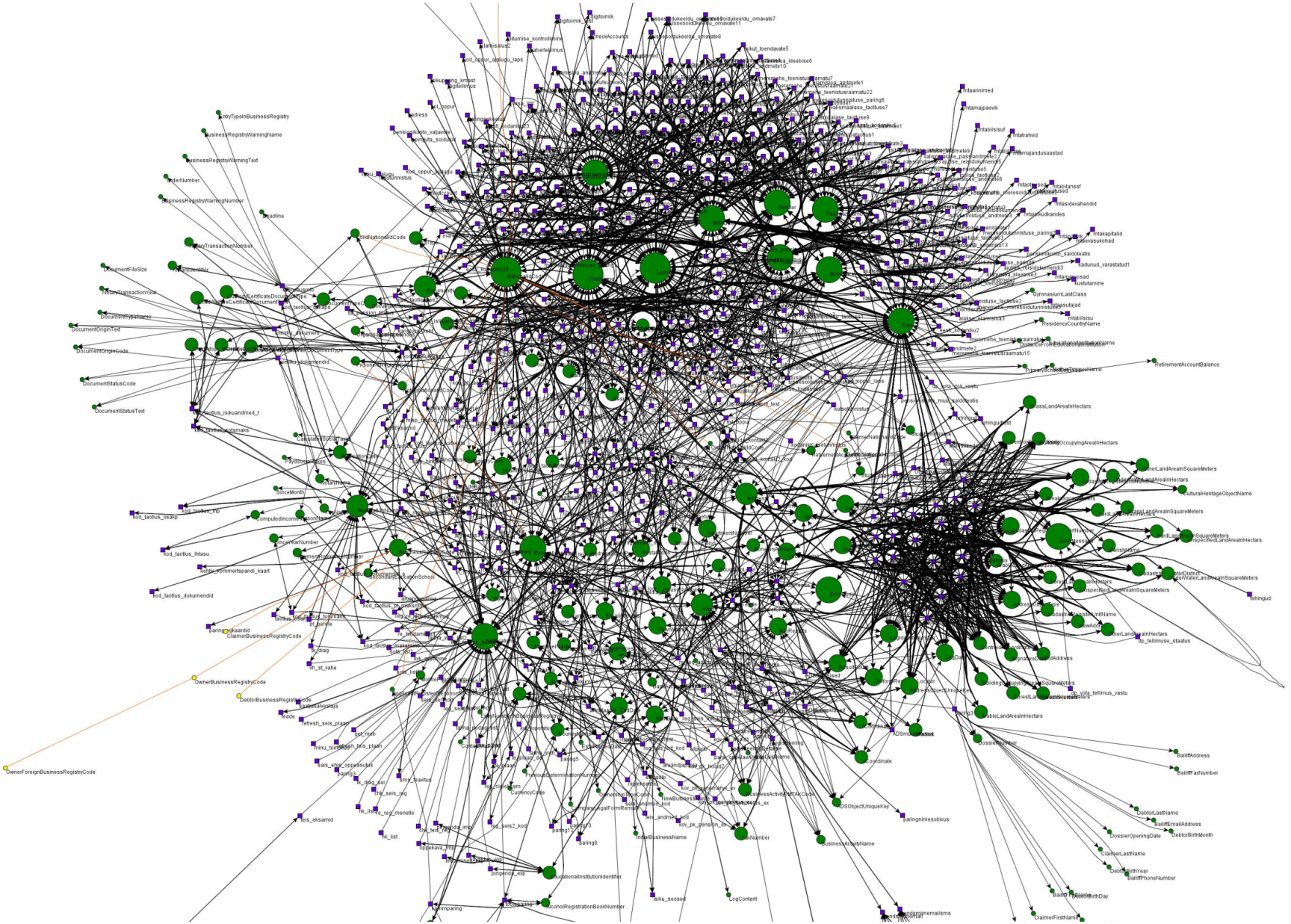
Estonian information system




HEALTH CARE BOARD
- Health care providers
- Health professionals
- Dispensing chemists
- Company registry
STATE AGENCY OF MEDICINES
- Coding Centre
- Handlers of medicines
- Citizen Registry
East Tallinn Central Hospital
Tartu Emergency Medical Service
Tartu University Hospital
North Estonian Regional Hospital
Järveotsa Family Health Center
TS
X-ROAD
Patient portal
Doctor's Portal
Monitoring portal
Goverment's e-service framework
www.eesti.ee
KIT
Citizen view
EIT
Employer view
AIT
Official's view
MISP
-Registry of rights of health care professionals
Doctor's and farmacies software solutions
HEALTH INSURANCE FUND
Prescription Centre
HEALTH INFORMATION SYSTEM
- Electronic Health Record
- Digital Image
- Digital Registration

Service transactions in X-Road by providers





Legislation

National Cyber Security Strategy of 2008

- Creation of a cabinet-level **National Cyber Security Council**
- Restructuring of the **Estonian Informatics Centre** for critical civilian information infrastructure protection and monitoring the country's cyber space

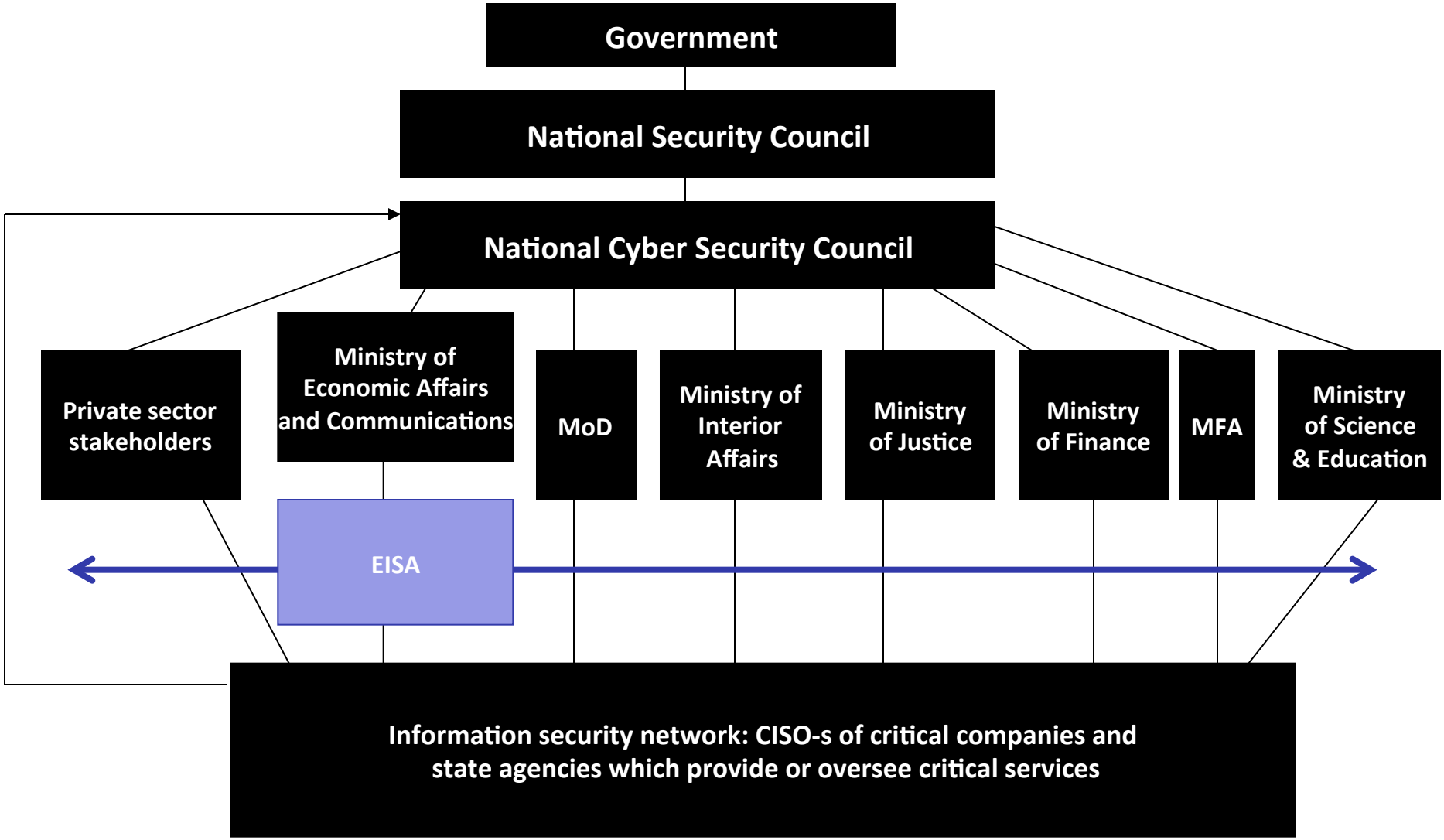
Emergency Act of 2009

- Cyber attacks can constitute a national emergency
- Re-definition of critical services and coordinating agencies in light of lessons learned
- Compulsory baseline IT security standards for the public sector
- Creation of the Cyber Defence League

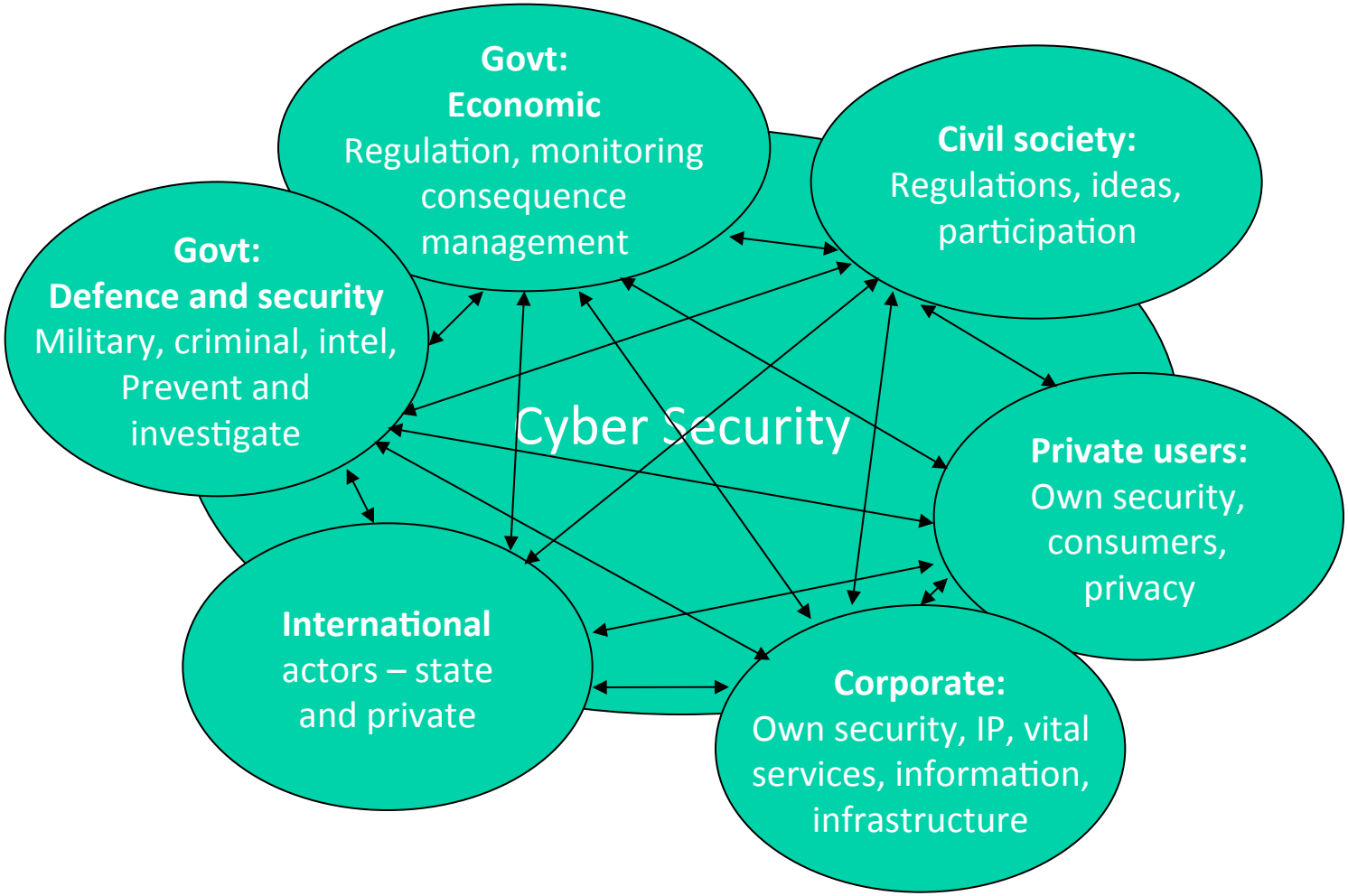
National Cyber Security Strategy of 2014

- **P**rotecting **Trust**
- E-Government **resilience**

National organization



Many responsibilities



Not just government

Banks, major telecoms, etc

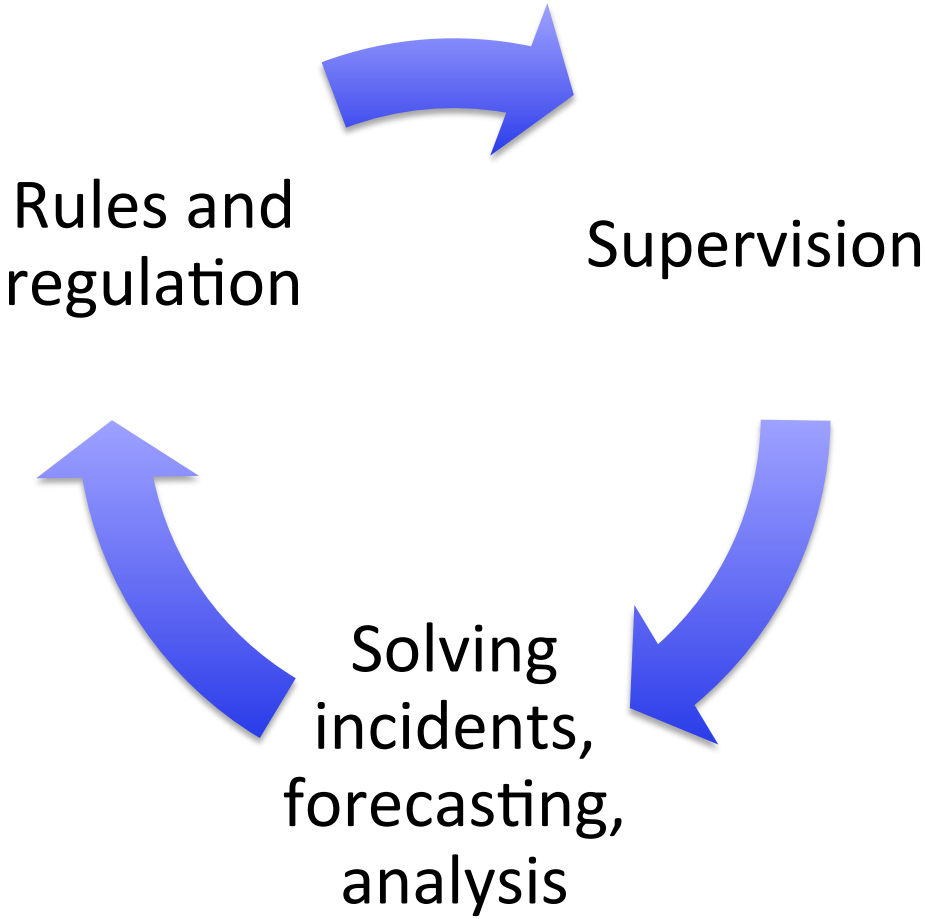
- Maintain services for the state and users
- Coordinate with the government, each other

Individual citizens, awareness and education

- Graduate programs in information security and cyber defence
- IS modules in BA programs, training for specialists
- Increased funding for IS research
- Primary and secondary education include computer safety classes in curricula

Important actors

- Ministries: MEcon, MoD, MoI, MFA, MoJ
- EISA (incl CERT.ee)
- Other state IT agencies: SMIT, RIK
- Police, Security police, Prosecutor/Judiciary
- EDF, Cyber Defence League
- E-governance Academy
- Think tanks: ICDS, EIHR, Praxis
- ICT export cluster, individual companies (Cybernetica, SK, Webmedia)


Rules and regulation
Supervision
Solving incidents, forecasting, analysis

Collective brain

- Knowledge and skills are weapons
- Cooperation to host the knowledge
- Principles – respect of freedom

ECDL

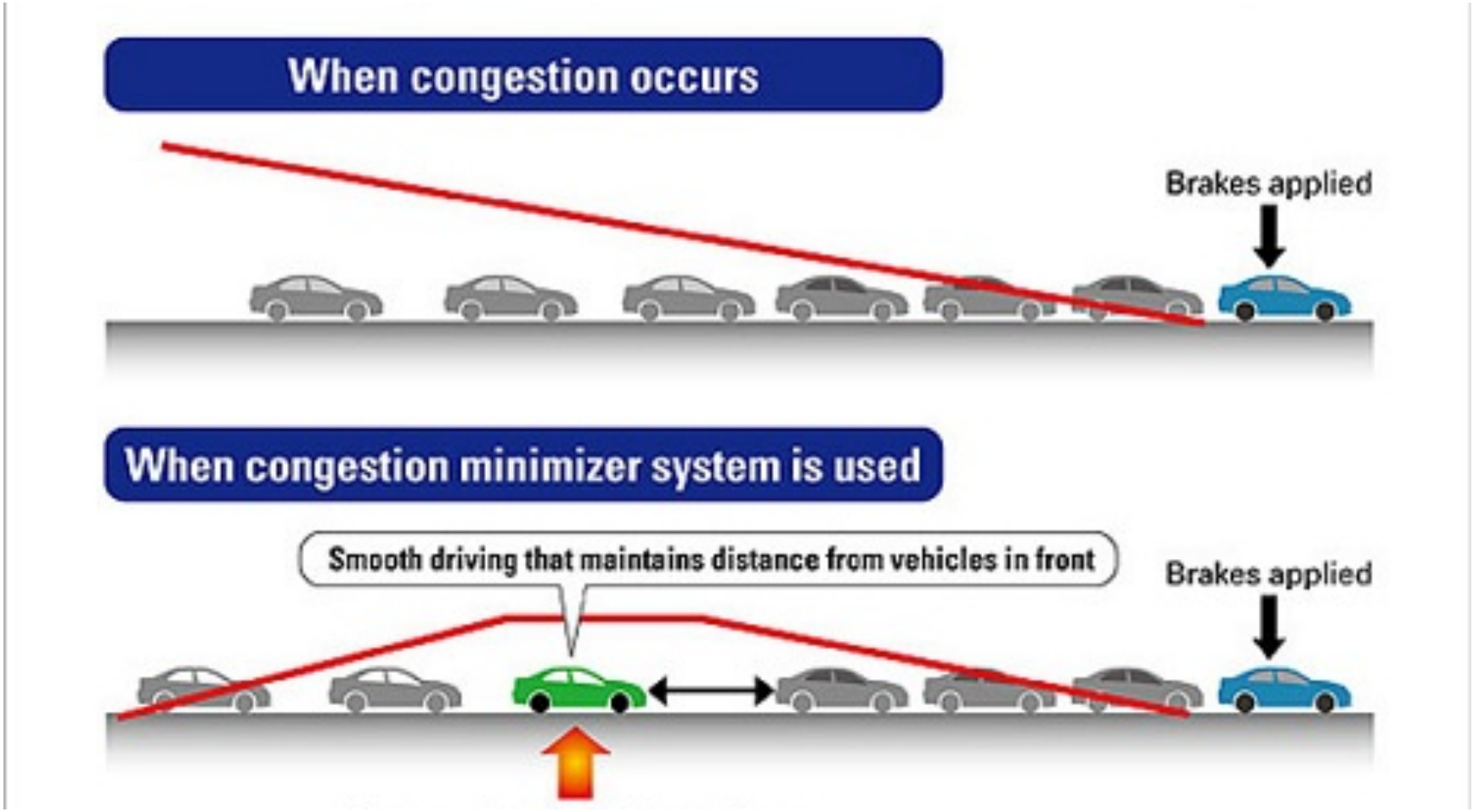
Protecting way of life

- CIIP officer network
- Cybersecurity specialists
- Support – law, economy, comm, psy

NATO CCD CoE

- 17 nations
- 3 focuses
  - Legal and Policy
  - Technical
  - Concepts and Strategy
- Conference
- Training courses

Smart transport



Business models

- Health in Europe
- Smart Home
- Education
- Logistics
- Energy

Writing humans into software

Data Formats

- Security linear
- Market exponential

- If automation is an answer, then

- We need agreed formats

Export

Allikas: http://www.toonpool.com

Other countries

USA
China
Germany
Sweden
Finland
Brazil
Korea
Iran
Russia
UK
France
Switzerland
Malaysia
Japan
Africa
EU