

# Telematics Department

Department was founded in 2000 as a part of Institute of Robotics and Technical Cybernetics. In 2012, the Department joined the Institute of Applied Mathematics and Mechanics, Technical University of St. Petersburg

**Areas of research activities of the department include:**

- telematics of smart and cyber-physical objects;
- network-centric control of space and planetary robots;
- cloud and computer network security;
- advance telematics services
- high-performance and cloud computing

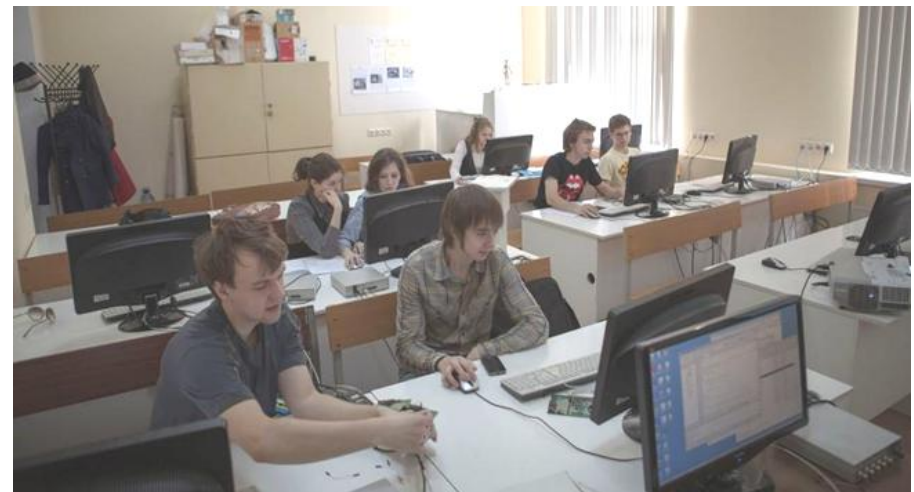
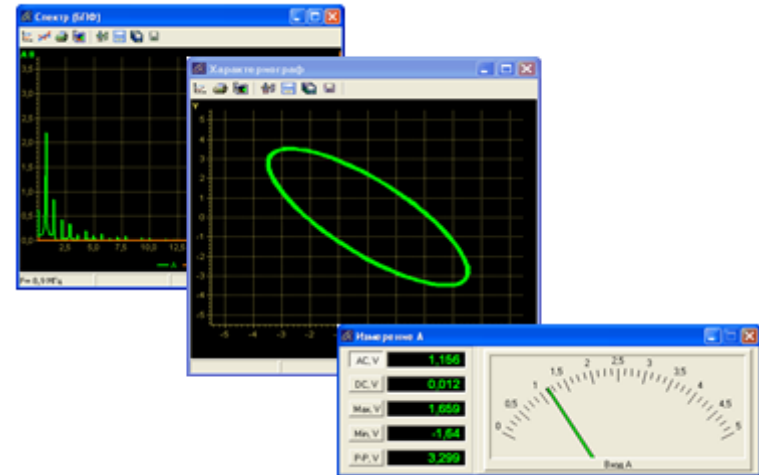


# Telematics of smart and cyber-physical objects;

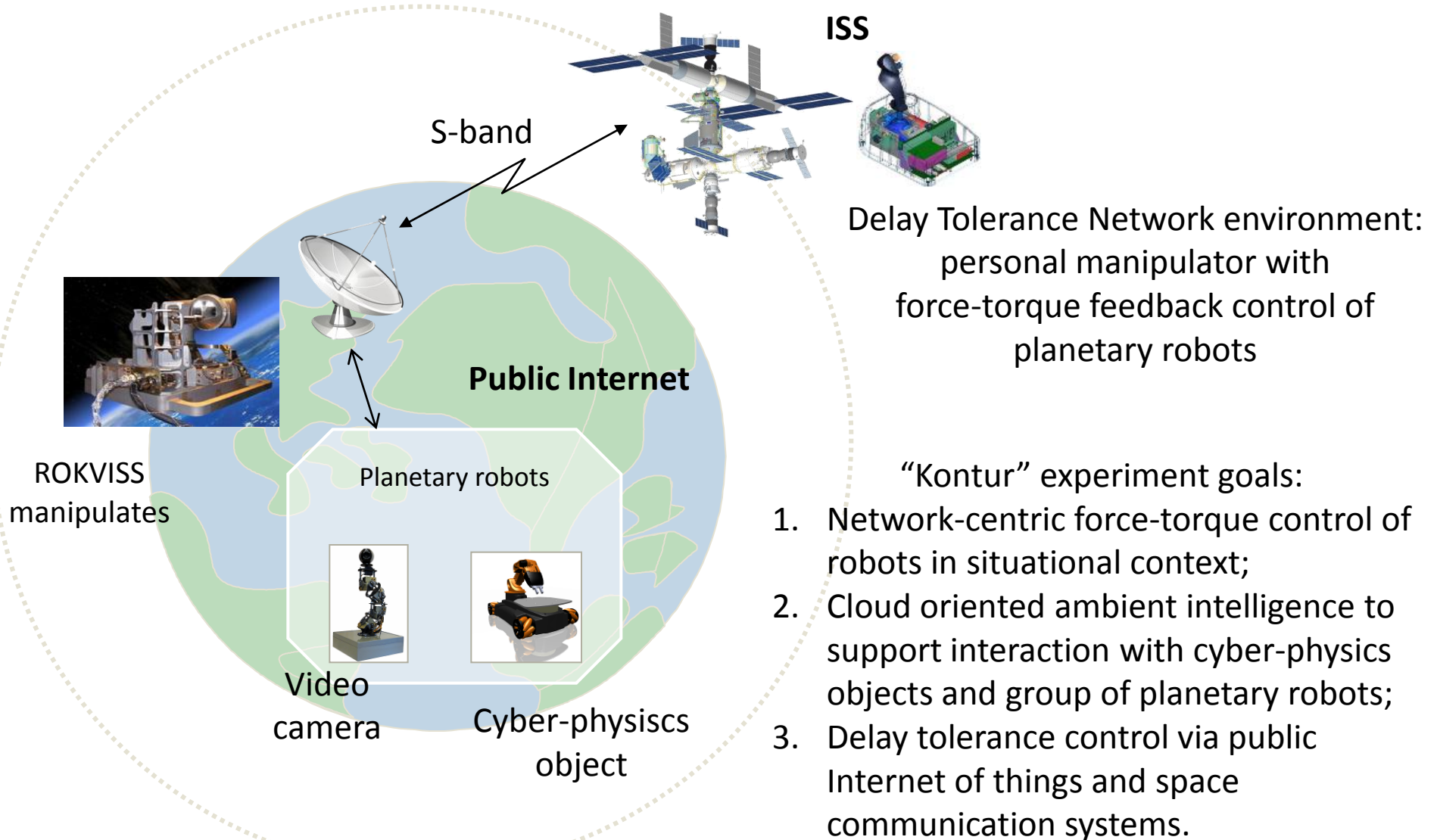
## Telematics smart platform OSCIGEN



## Cyber-physical operations: visualization and spectral analysis

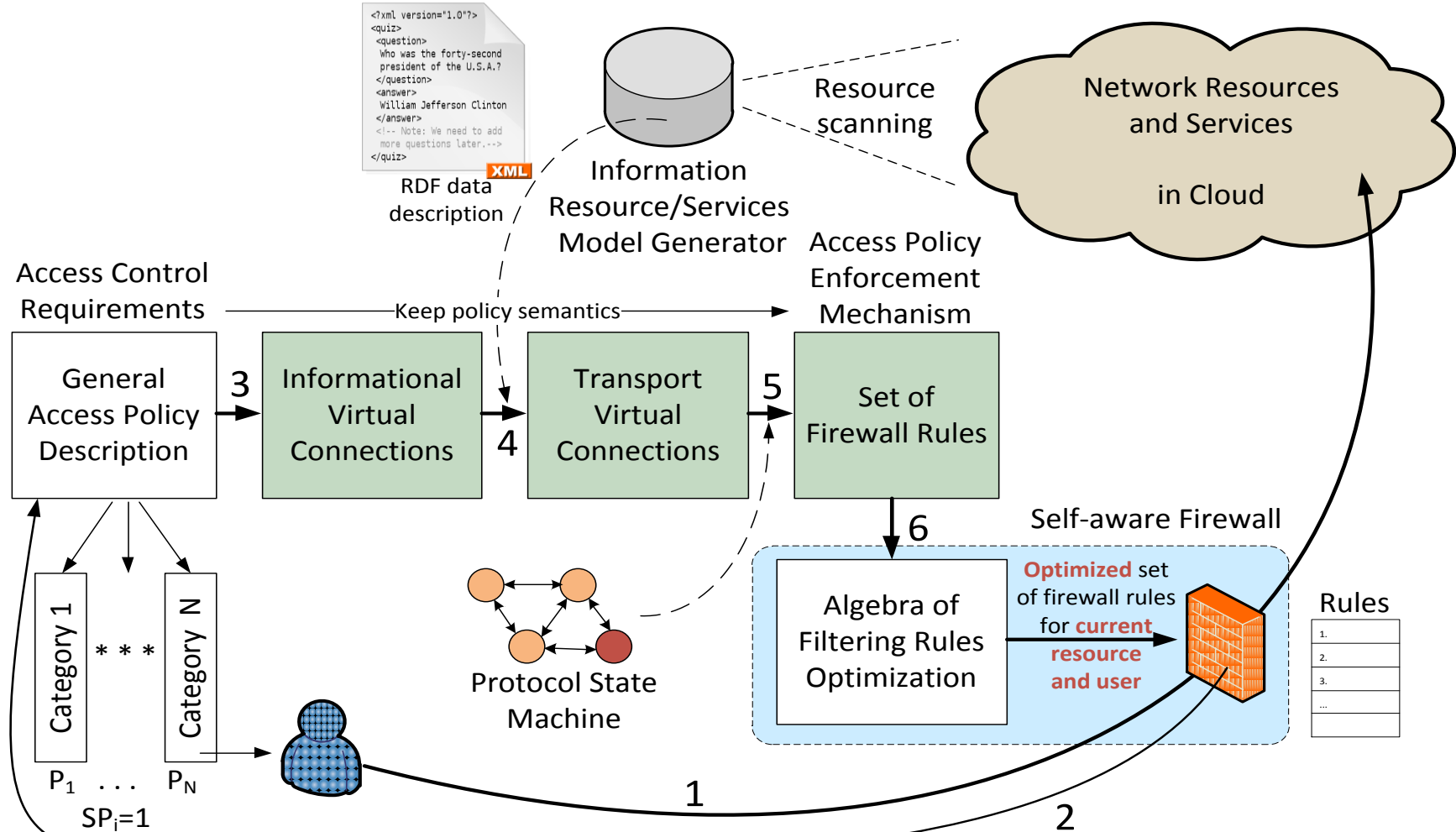


# Network-centric control of planetary robots from the board of ISS



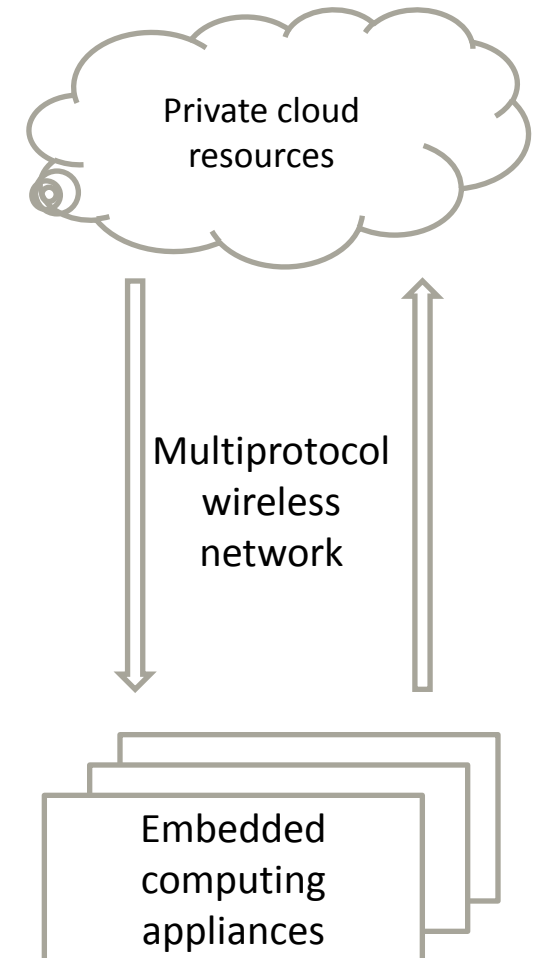
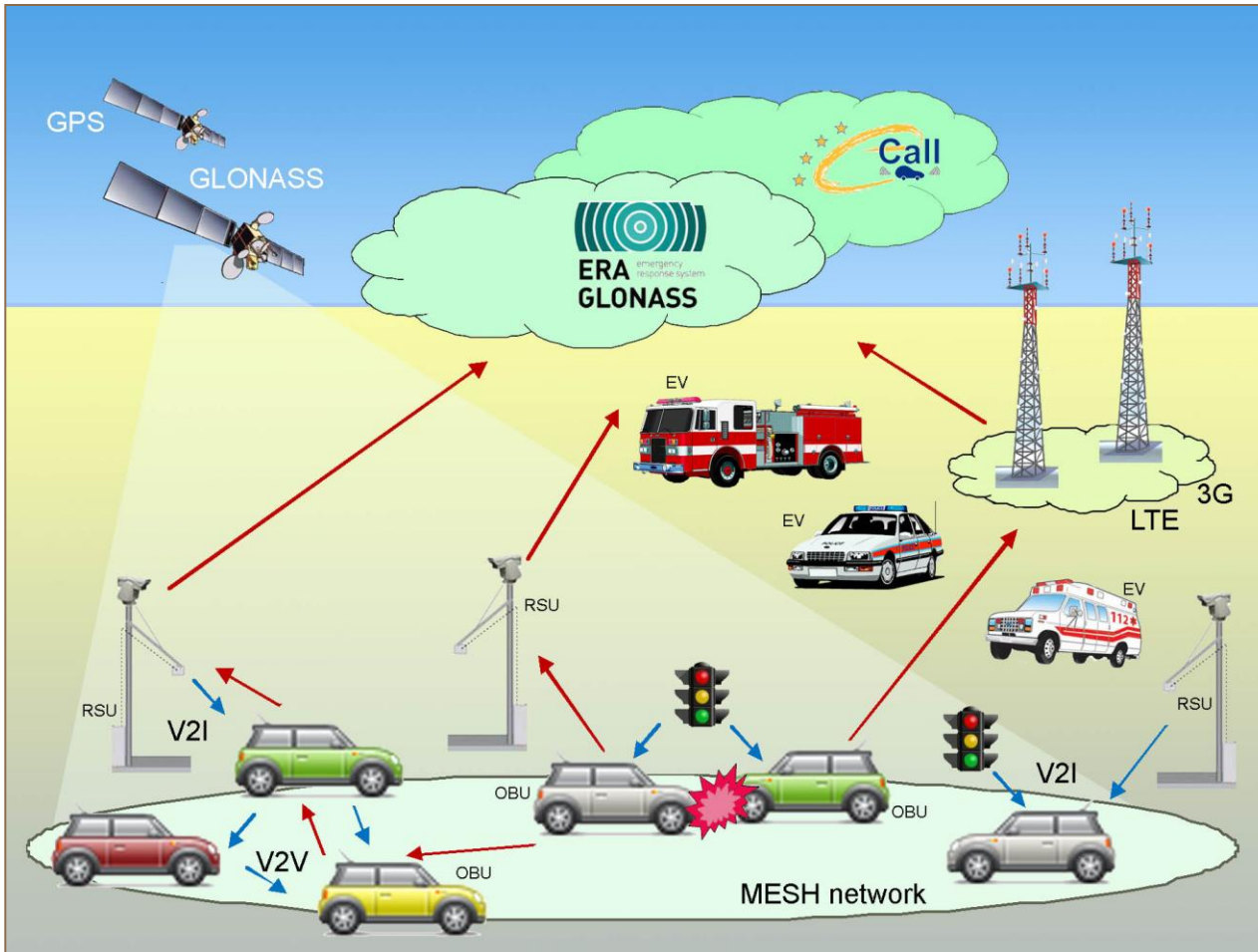
# Cloud and computer networks security system

Security policy semantics form invariant essence of access rules transformations (3,4,5,6).



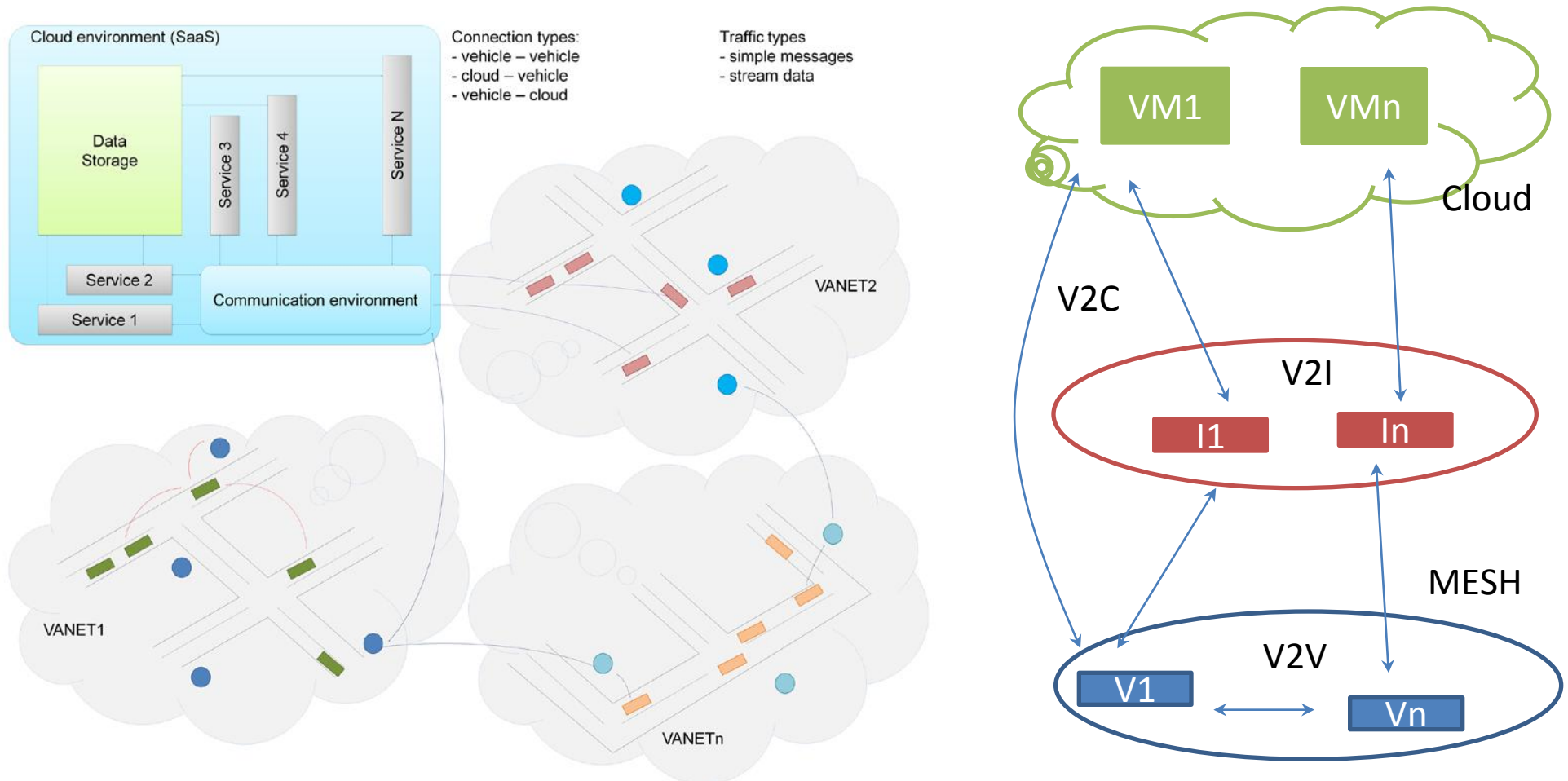
# Advance telematics services for navigation system

Ambient real-time intelligence for moving vehicle.



# Advance telematics cloud-based vehicle control

Concept: Vehicles via their virtual machines images connects to global information services

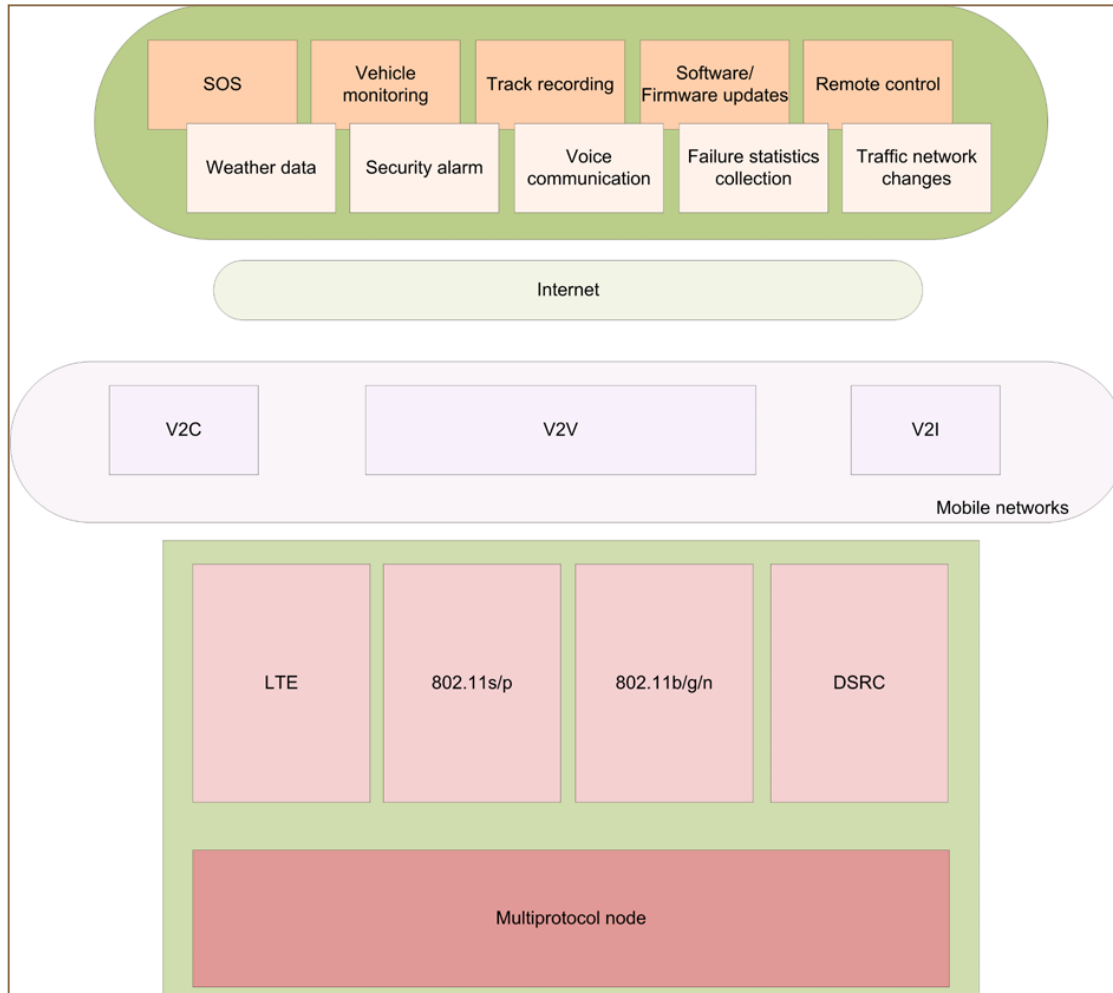


Implimentation: Virtual machine as a part of cloud environment and MESH network of moving vehicles provides infrastructure of fault-tolerant and flexible traffic control.

# Implementation of multiprotocol telematics technology

Idea: Find reliable bilateral way of message delivery

Solution: Development of multiprotocol node and high-level routing algorithms



Support technologies:

- DSRC,
- LTE,
- MESH
- WI-FI.

Simulation model provides selection of the set of typed parameters:

- routing protocol,
- communication traffic intensity,
- number of network points.