NordicICTLivingLabforSocietalSecurity

The concept of Living Lab
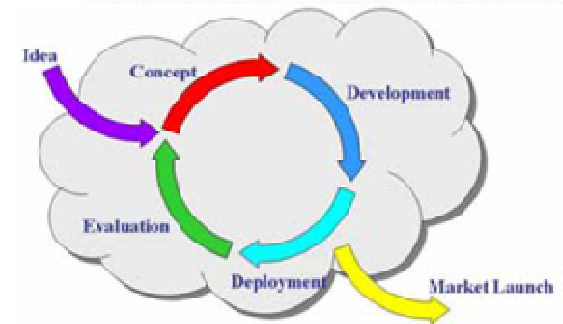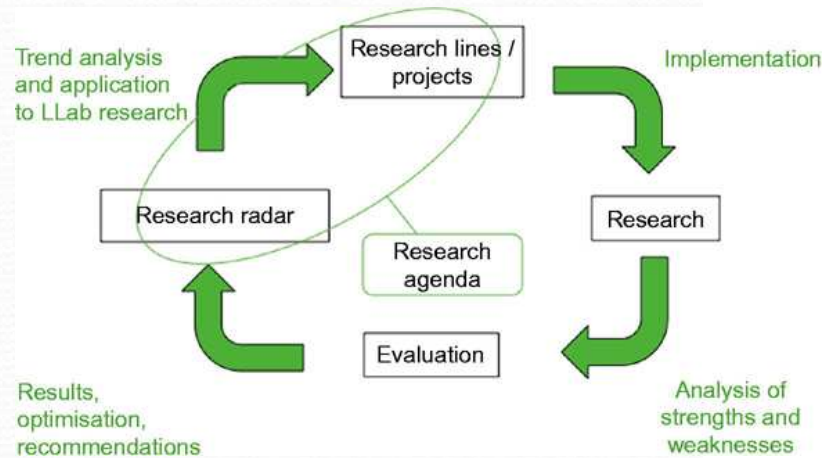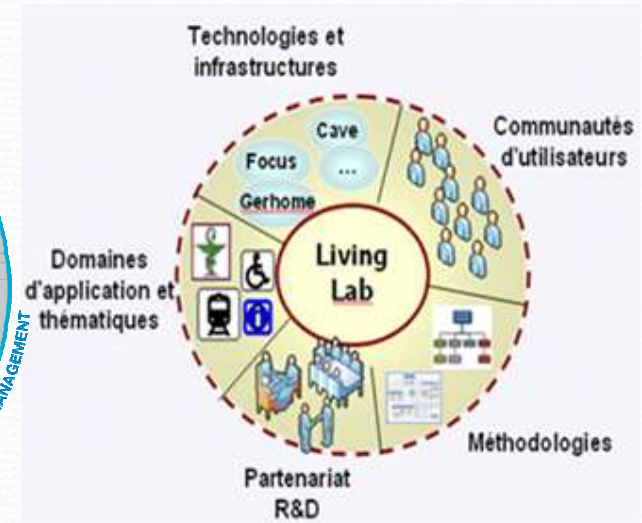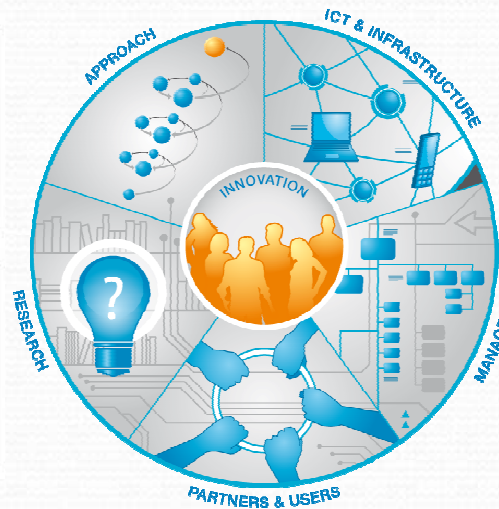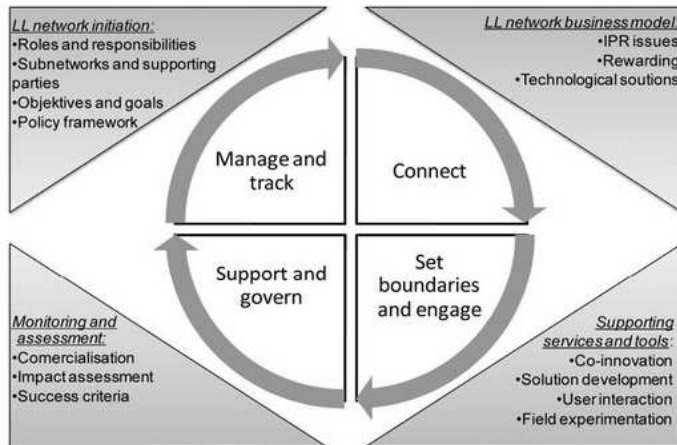
The Living Lab multidiscilianry concept

Multidisciplinary Research

Humanistic research

Societal research

Scenarios, forecasts, cultural, international, legal aspects, models

Usability research

System research

ICT research

Living Lab Federated ICT Experimental Platform

ICT applications

| Health | Environment | | Infrastructure | Safety |

Smart societal environments

Smart societal environments

transnational

city,regional,national

individualsmartenvironment   vehicular

Newapplicationsandbusinessareasinsecurityand   safety,regional,urban, infrastructuremanagement,planning,designandICT

The roles of ICT Living Lab

The Living Lab key objectives and goals
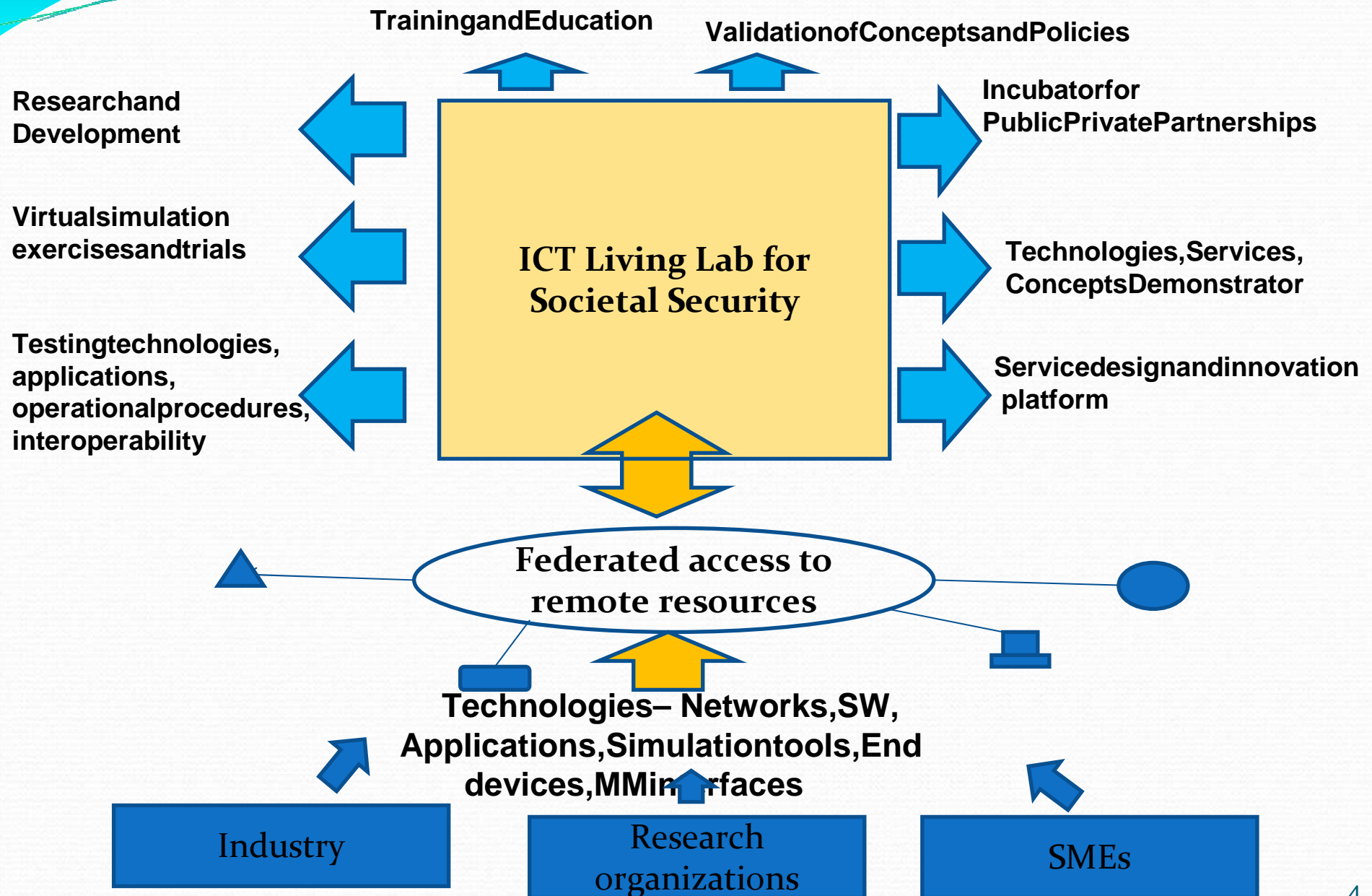
- To involve users in real life systems operations provided by the Lab ICT Platform, to test technology solutions, interoperability, feasibility with operational procedures.

- To stimulate innovation and creation of business ecosystems in the areas of new technologies and digital services development by involving user communities in the design, education and training with the elements of real systems and environments.

- To educate user communities on new and future technologies by demonstrating their potentials and advantages by using Living Lab ICT Platform as a demonstrator and as education and training platform

- To promote industrial and academia multidisciplinary research collaboration involving humanistic and societal research with the emphasis on system approach.

- To promote integrated approach and enhanced interoperability for future Societal Security ICT and Smart Environments.

- To stimulate the establishing of Public Private Partnerships (PPP) and ecosystem to support sustainable operation of the Living Lab.

The Living Lab basic and applied multidisciplinary research

Research areas

- **Humanistic societal research**. Role of ICT in societal security, peacekeeping. Sociology. Social psychology. Role of ICT in international conflicts resolution. Societal models.

- **System Research** on societal security and ICT incl. modeling , system resilience analytics

- **Human–machine/system interactions research** Usability, MMI and digital services research

- **ICT Research** on adaption incl. het networks, intelligent, techno – social networks, adaptive ICT, Future Internet, IoT, network centricity, interoperability

- **Experimentally driven** research for the areas above

Research

- **Basic research**

- **Modeling and simulation**

- **Applied and experimental research**

Implementation

- **Demonstrations and testing**

- **Training**

ICT Living Lab

Multidisciplinary research

Experimental ICT Platform

Multidisciplinary thematic topics

Federation

Technology Domain/Community

Humanistic Domain/Communities: Users/Public/ Research Community

Living Lab ICT Federated Platform

Platform Technology Components

| Users research | Societal research |

Networks | SW, C₃ | Devices | Sensors | Test beds | ....

Platform participants
OEMs, SMEs, Operators, Research, Academia, Living Labs ,....

Partner 1
Partner 2
Partner 3
Partner 4

Experimental
Platform

Simulation platform

(Interoperability) Platform

Training, Education Platform

Multidisciplinary Thematic Topic

Services, Applications, Future Internet, Internet of Things

Multidisciplinary Thematic Topic

ICT Living Lab Services: Research, Demonstration, Training, Testing, Education

Customers: Industry, Operators, SMEs, Technology RD,... Authorities, Society, Users

SIELAry

ICT applications domains

- **Environment**
  - Environmental monitoring

- **Health**
  - Telemedicine and elderly care

- **Urban living, infrastructure and transport system**
  - Smart and Safe Cities
  - Digital Eco Cities
  - Intelligent transport systems and cars
  - Smart homes
  - ICT infrastructure and business continuity protection

- **ICT for Safety and Security**
  - Integrated Situation Awareness and Emergency Management Tools
  - Training and simulation tools

- **International aid, conflicts mediation and peacekeeping**

ICT for Safety and Security

Urban living, infra, Transport systems

Health
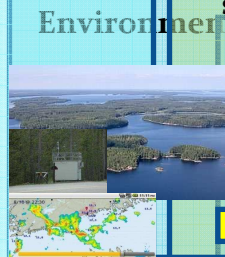
Environment

International aid,

Thematic topics and projects

Network Centricity

Interoperability

Heterogeneous Networks

Integration of resources and expertise

- ICTandEnvironment

- ICTandHealth

- ICTforurbaninfrastructureand

transportsystemmanagement

- ICTforSafetyandSecurity

- ICTandInternationalpeacekeeping,

conflictsmediationandhumanistic

research

CognitiveRadio

SensorsNetworks

MobilityICT

FutureInternet

ICTNetworks   SituationAwareness

Theycanworktogether!

MedicalCare
Telemed

Environmental
Monitoring

UrbanLiving
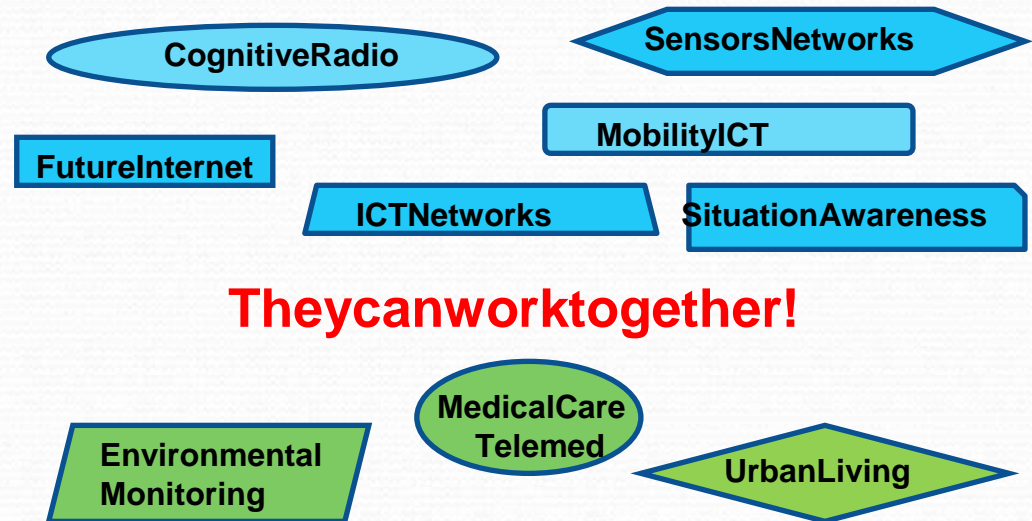
Regionalinitiativesand LLs

TheLivingLabSmartEnvironmentsandmajor businessapplications

RESEARCH

Multidisciplinary,systemorientedresearch

ICT	Humanistic societal research	System research

EXPERIMENTAL PLATFORM

LivingLabfederatedICT experimentalplatform

SOCIETAL SMART ENVIRONMENTS and SYSTEMS

SocietalsmartenvironmentsandICTapplications

transnational

city,regional,national

individualsmartenvironment   vehicular

Health	Environment	Infrastructure	Safety

Newsocietalandbusinessapplications

SmartEnvironmentsandsystemsfor:

- SecurityandSafety.Emergencymanagement.
- Urban,regionalandnationalinfrastructureandse   rvices
- Peacemediation,transnationalcooperation
- Smartcars
- Individualsmartenvironmentsapplicationsandins   truments

SIELAry

The system view of Smart Societal Environments of Living Lab

Smart societal environments

transnational

city,regional,national

individualsmartenvironment   vehicular

Data analysis tool s

Network centric operations

Data pool

Intelligent, het. network

Living Lab ICT federated experimental platform

Consolidationofpartnersinputs

Living Lab major input areas

Research

SIELAry
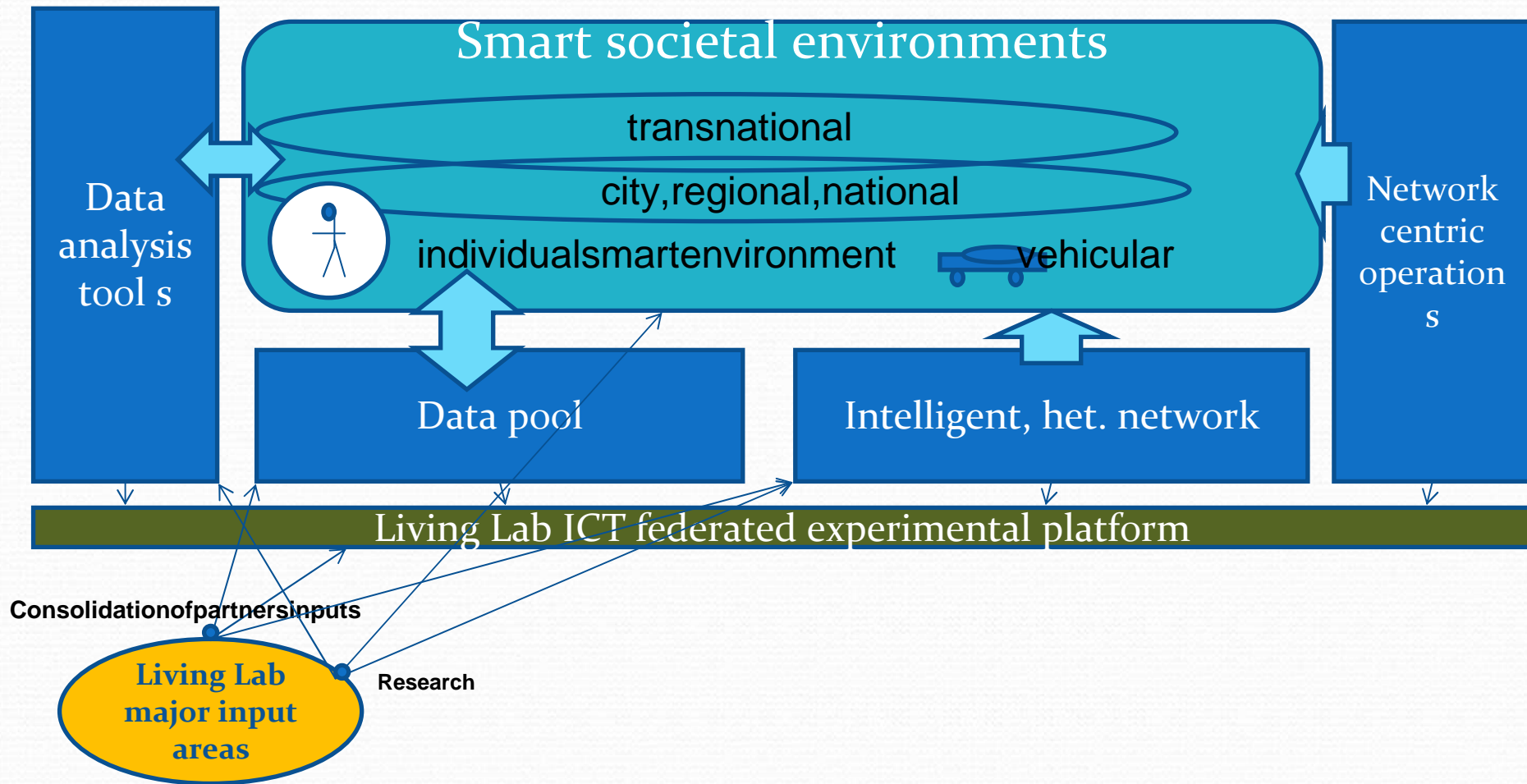
Security and Safety. Emergency management.

New products and services

- Multidimensional situation awareness and decision support
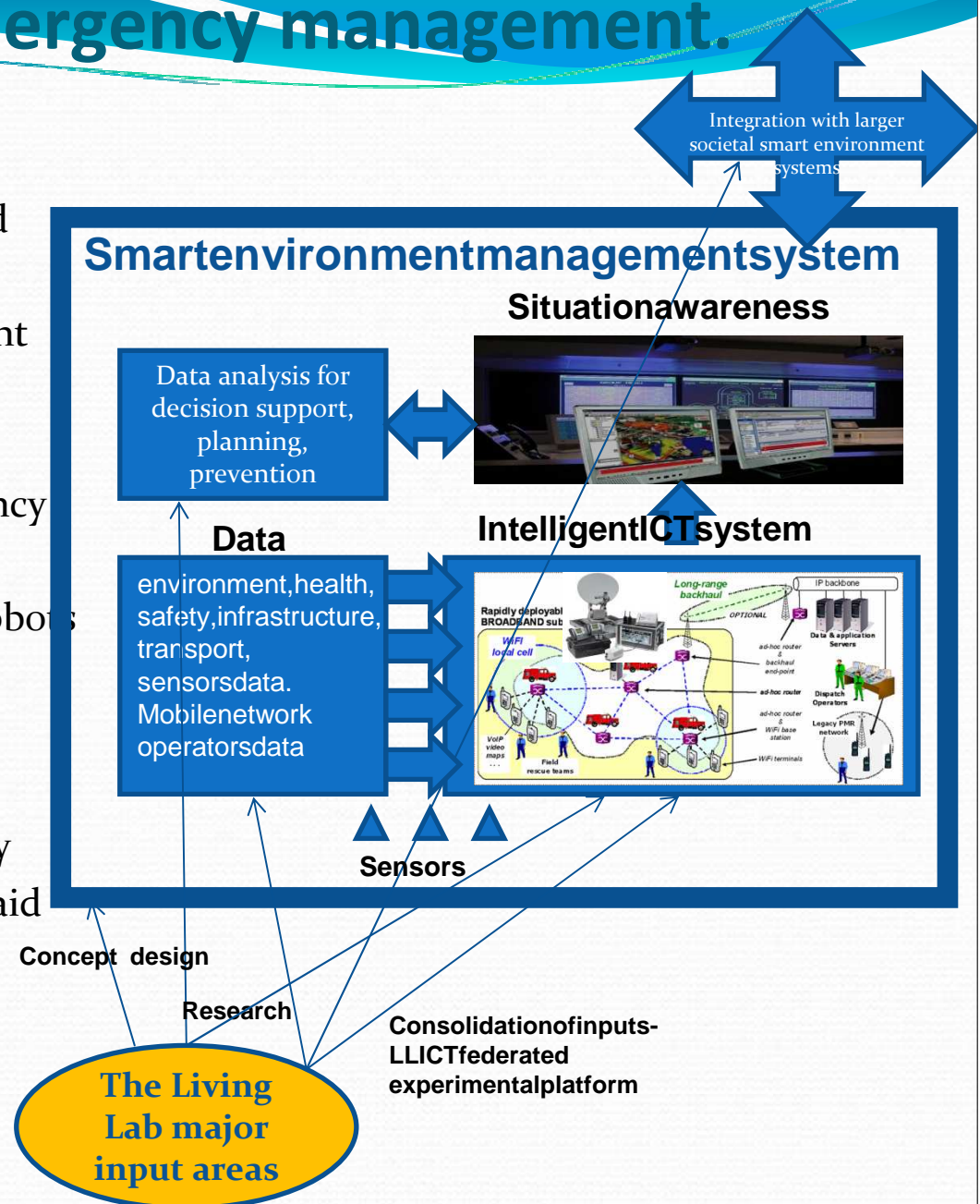- Integrated border and security management
- Deployable, intelligent ICT systems and heterogeneous networks
- Wearable smart environments for emergency response team workers
- Smart system integration of sensors and robots

Customers

- Emergency management authorities, safety training organizations, UN humanitarian aid organizations

Main business players

- ICT equipment providers, system integrators sensors providers, network operators, SW providers

Integration with larger societal smart environment systems

Smartenvironmentmanagementsystem

Situationawareness

Data analysis for decision support, planning, prevention

IntelligentICTsystem

Data
environment, health, safety, infrastructure, transport, sensorsdata. Mobilenetwork operatorsdata

Sensors

Concept design

Research

Consolidationofinputs-LLICTfederated experimentalplatform

The Living Lab major input areas

Urban, regional and national infrastructure and services
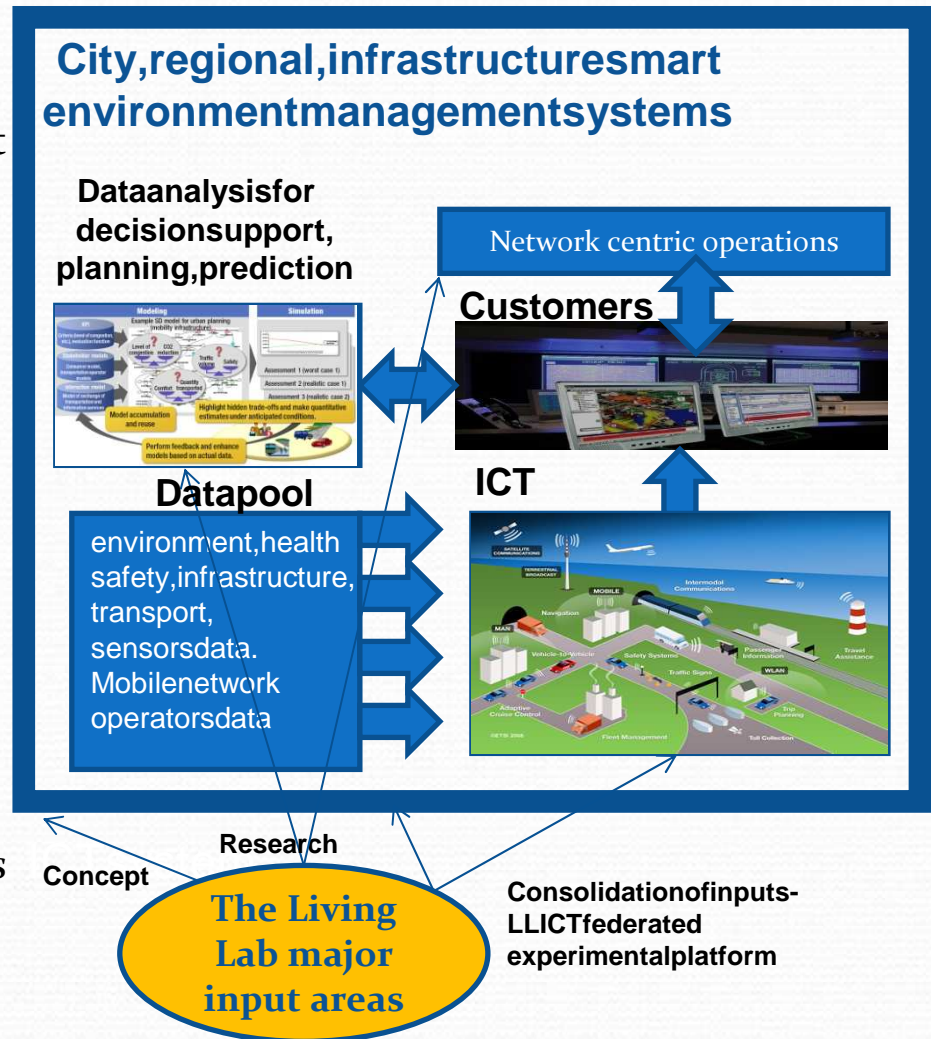
New products and services
- City management, monitoring, planning
- Public and private services planning, management
- Intelligent transport system
- Smart electricity grids
- Public health, migration, environment

Customers
- City administration, public and private service providers, public health, architectures, service design agencies, infrastructure network operators

Main business players
- service providers, data providers, ICT equipment providers, system integrators, building industry, sensors providers, network operators, SW providers

City,regional,infrastructuresmart environmentmanagementsystems

Dataanalysisfor decisionsupport, planning,prediction

Network centric operations

Customers

ICT

Datapool
environment,health safety,infrastructure, transport, sensorsdata. Mobilenetwork operatorsdata

Research

Concept

The Living Lab major input areas

Consolidationofinputs-LLICTfederated experimentalplatform
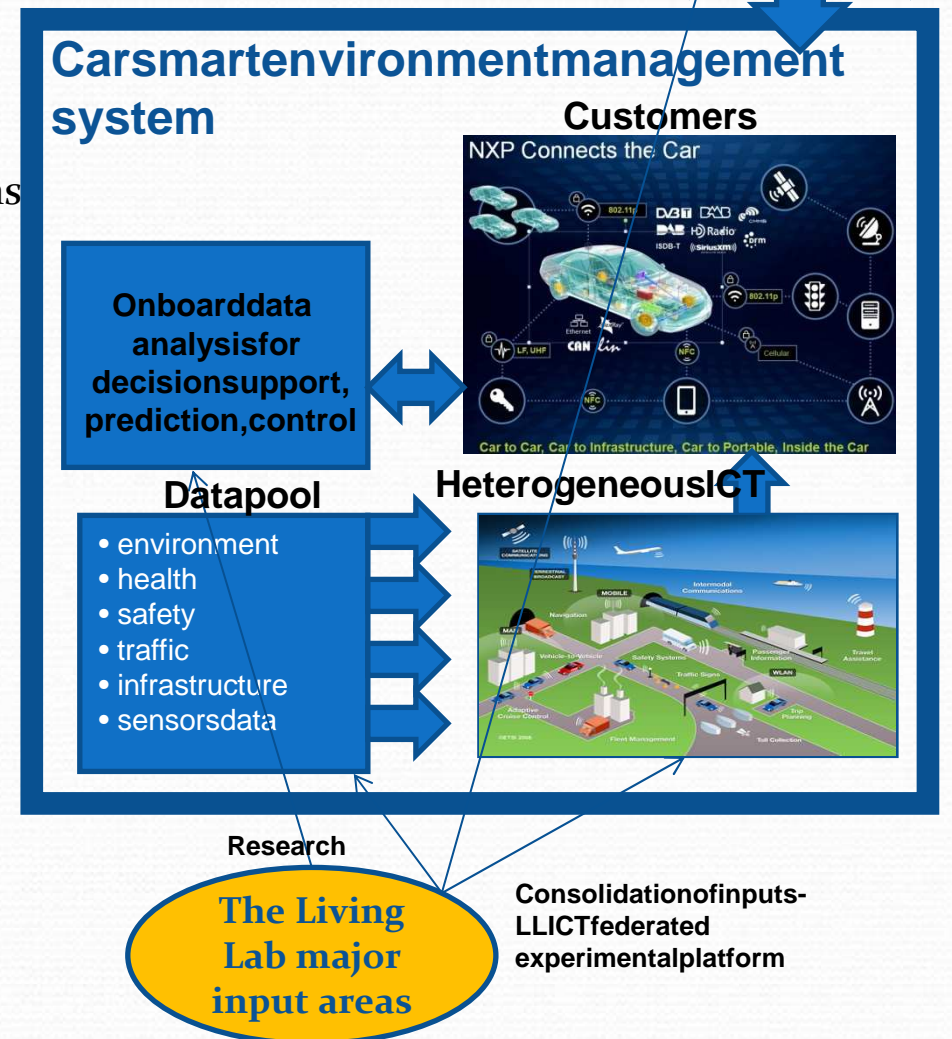
Smart cars

New products and services

- Intelligent car information and control systems
- Intelligent specialized car information and control systems
- Car information systems linked with IST and larger smart environments
- Smart ships, smart trains

Customers

- car owners and byres, organizations using socialized cars organizations
- ships, trains operators
- public transportation companies *(taxi, bus)

Main business players

- Cars, vehicles manufactures, sensors and car control devises manufactures, network operators

Integration with ITS, others smart env.

Carsmartenvironmentmanagement system

Customers

Onboarddata analysisfor decisionsupport, prediction,control

Datapool
- environment
- health
- safety
- traffic
- infrastructure
- sensorsdata

HeterogeneousICT

Research

The Living Lab major input areas

Consolidationofinputs-LLICTfederated experimentalplatform
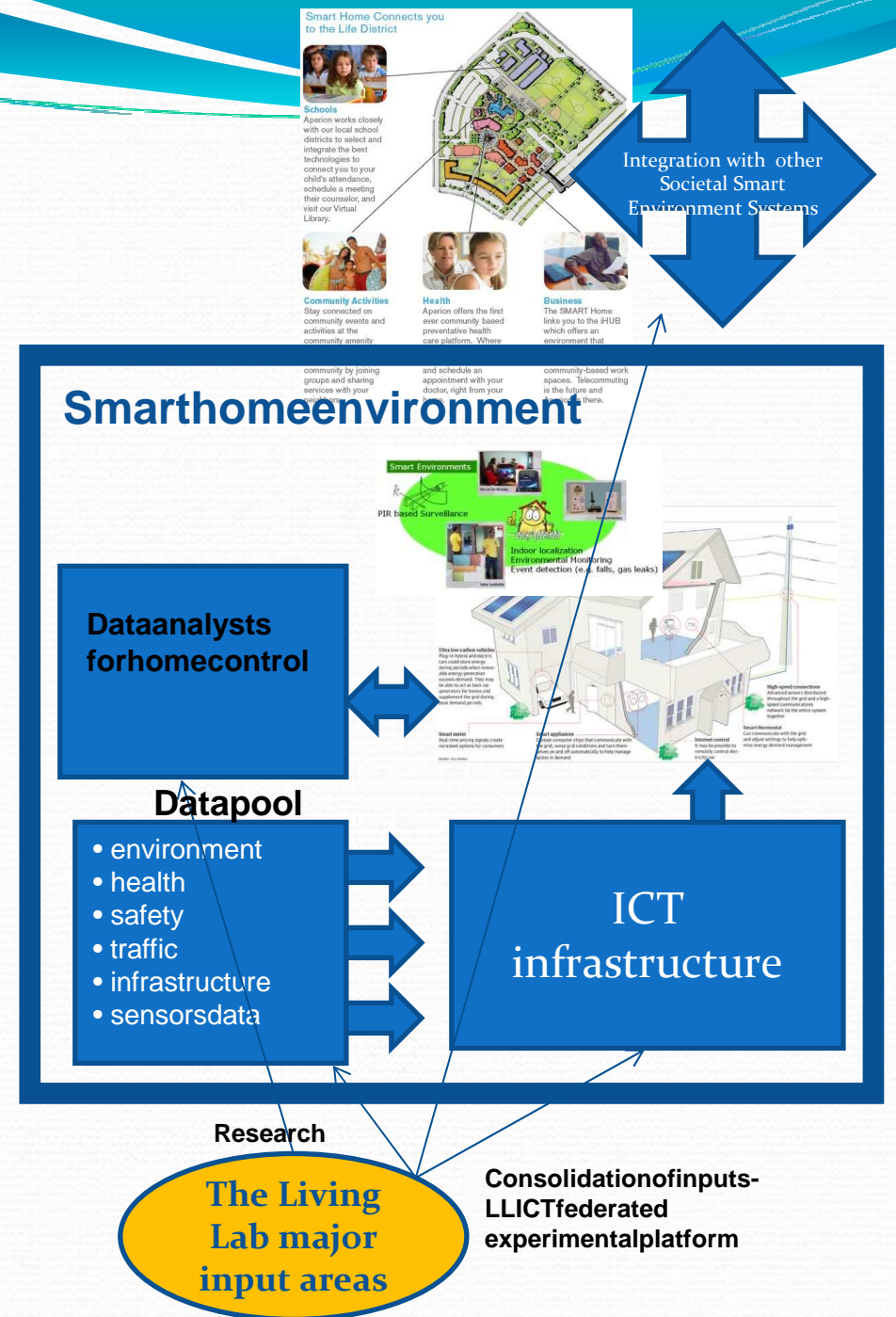
Smart homes

New products and services

- Intelligent home information systems

Customers

- Home owners, housing communities

Main business players

- ICT system integrators, building companies, network operators

Integration with other Societal Smart Environment Systems

Smarthomeenvironment

Dataanalysts forhomecontrol

Datapool
- environment
- health
- safety
- traffic
- infrastructure
- sensorsdata

ICT infrastructure

Research

The Living Lab major input areas

Consolidationofinputs-LLICTfederated experimentalplatform

Advanced ICT

New products and services

- Heterogeneous intelligent ICT systems adapted for societal smart environments. Including
- Het. networks including (SatCom, sensors networks)
- Data collection tools and access services
- Data analysis applications
- Simulation tools
- Federated experimental platforms

Main business players

- ICT providers, network operators, SW developers

Data collection tools , including wireless operators real time data	ICT experimental platform
Data analysis, decision support, planning	Intelligent ICT networks and applications
Simulation tools	

Research
- ICTadaptation
- Usability
- Societalaspects
- ExperimentalPlatform
- Linkwithusercommunities
- Forum

Consolidationofinputs- LLICTfederated experimentalplatform

The Living Lab major input areas