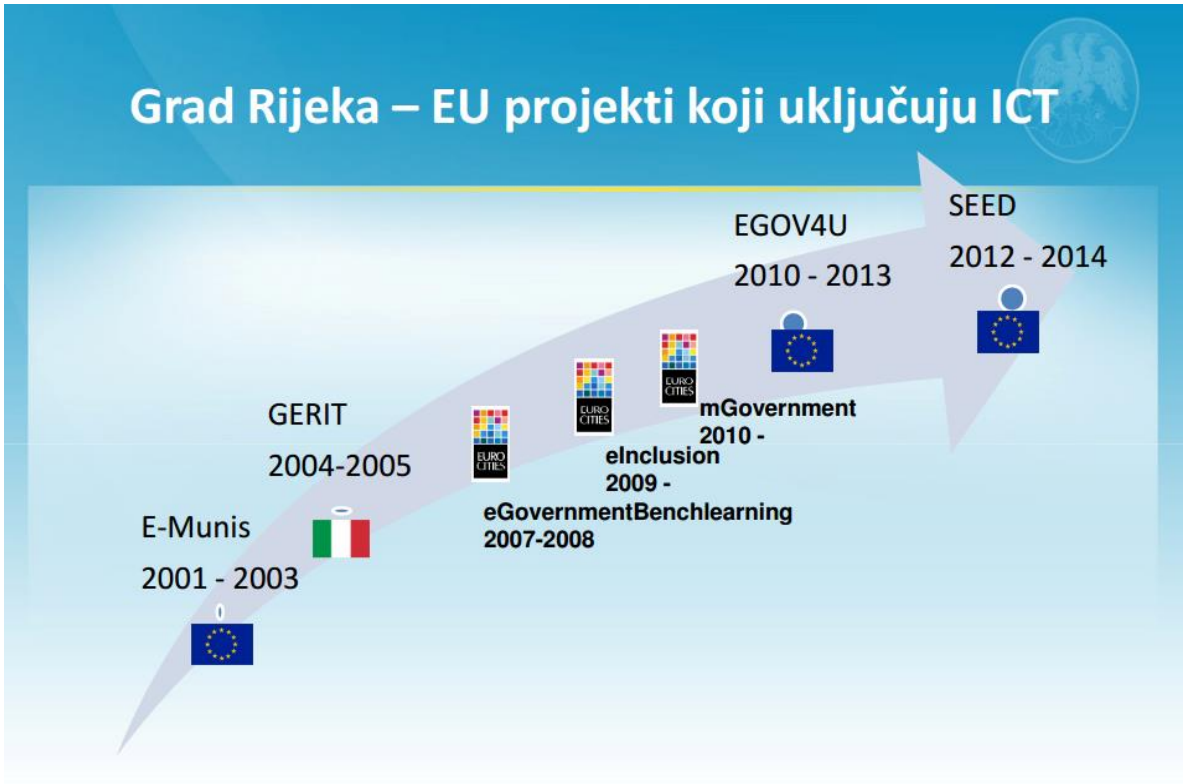
RIJEKA Competence center for **smart CITIES**

WHY Rijeka ?



- Understanding Smart City subject
- Number of prototypes implemented
- Significant contribution in scientific/expert papers

WHY Ericsson ?

Figure 1 Competence Centres Funded in the Programme

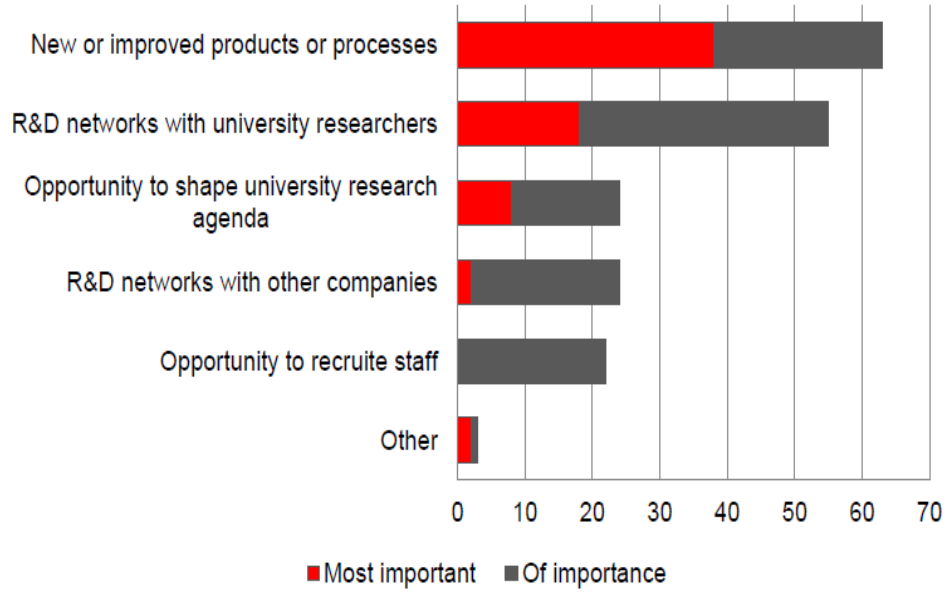
Chalmers University of Technology, Gothenburg	Catalysis, KCK* Combustion Engines Research, CERC* Environmental Assessment of Product and Material Systems, CPM High Speed Technology, CHACH High Temperature Corrosion, HTC* Railway Mechanics, CHARMEC
Karolinska Institutet, Stockholm	Research Centre for Radiation Therapy
Linköping University	Bio- and Chemical Sensor Science and Technology, S-SENCE Information Systems for Industrial Control and Supervision, ISIS Noninvasive Medical Measurements, NIMED
Luleå University of Technology	Integrated Product Development, Polhem Laboratory Minerals and Metals Recycling, MiMeR
Lund University	Amphiphilic Polymers from Renewable Resources, CAP BioSeparation, CBioSep Circuit Design, CCCD Combustion Processes, KCFP*
Royal Institute of Technology, Stockholm	Bioprocess Technology, CBioPT Customer Driven High Performance Production Systems, Woxéncentrum/Workshop design Electric Power, EKC* Fluid Mechanics for Process Industry, Faxén Laboratory Inorganic Interfacial Engineering, Brinell Centre, BRIIE Parallel and Scientific Computing Institute, PSCI Speech Technology, CTT Surfactants Based on Natural Products, SNAP User-Oriented IT-Design, CID
Swedish University of Agricultural Sciences, SLU, Uppsala	Wood Ultrastructure Research Centre, WURC
Uppsala University	Advanced Software Technology, ASTEC Surface and Micro Structure Technology, SUMMIT

Source: VINNOVA. Energy Agency-financed centres are asterisked

Table 3 Top 20 most contributing corporate groups

Corporation	Number of CCs	Cash (MSEK)	In kind (MSEK)	Total (MSEK)
Ericsson	11	37.1	118.5	155.6
ABB	13	31.2	71.1	102.2
AB Volvo	11	29.8	58.1	87.9
AkzoNobel	8	19.6	41.1	60.7
SAAB AB	7	13.5	44.6	58.1
Sandvik	7	19.6	28.5	48.2
Ford (Volvo Cars)	6	19.0	23.5	42.5

Figure 9 Reasons to participate in CC



Centers of Competence

Croatian Vision

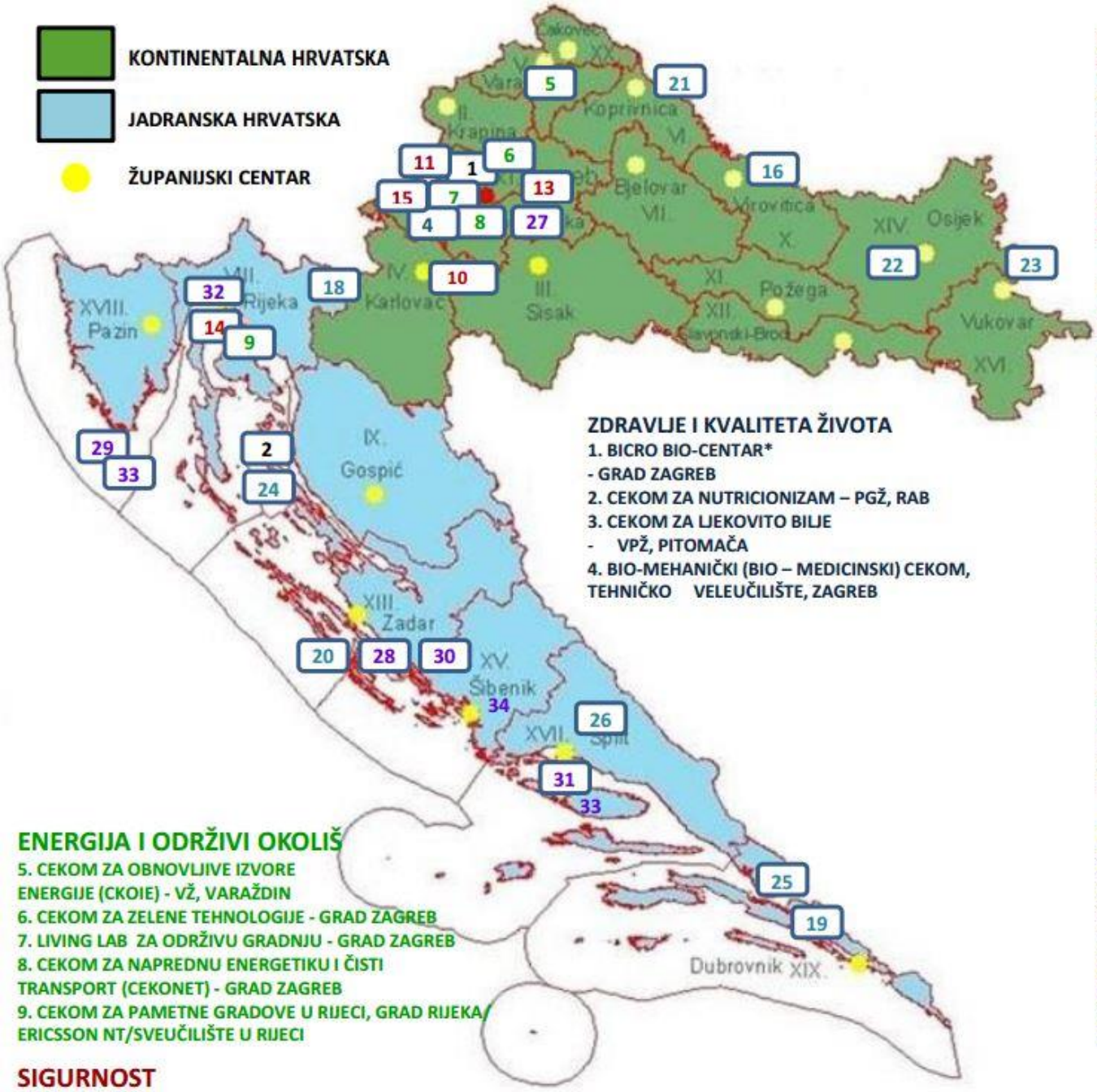
Centers of Competence

- Centres of competence are industry-led individual (networked) entities designed to provide support in raising capacities of business sector to enforce R&D projects, especially those focused on development and applied research and commercialization of results.

- Duration of the project activities supported through this EU grant scheme will be maximum 3 years (if project proposal includes only R&D activities) and maximum 5 years if project proposal also includes investment in research infrastructure.

- The lowest value of grant that can be awarded to a project is 1 million EUR. The minimum of activities in the project proposal related to R&D projects must be 50%.

- The maximum value of grant that can be awarded to a project is **15 million EUR.**



ZDRAVLJE I KVALITETA ŽIVOTA

1. BICRO BIO-CENTAR*
- GRAD ZAGREB
2. CEKOM ZA NUTRICIONIZAM – PGŽ, RAB
3. CEKOM ZA LJEKOVITO BILJE
- VPŽ, PITOMAČA
4. BIO-MEHANIČKI (BIO – MEDICINSKI) CEKOM, TEHNIČKO VELEUČILIŠTE, ZAGREB

ENERGIJA I ODRŽIVI OKOLIŠ

5. CEKOM ZA OBNOVLJIVE IZVORE ENERGIJE (CKOIE) - VŽ, VARAŽDIN
6. CEKOM ZA ZELENE TEHNOLOGIJE - GRAD ZAGREB
7. LIVING LAB ZA ODRŽIVU GRADNJU - GRAD ZAGREB
8. CEKOM ZA NAPREDNU ENERGETIKU I ČISTI TRANSPORT (CEKONET) - GRAD ZAGREB
9. CEKOM ZA PAMETNE GRADOVE U RIJECI, GRAD RIJEKA/ ERICSSON NT/SVEUČILIŠTE U RIJECI

SIGURNOST

10. CENTAR KOMPETENCIJA ZA SIGURNOST -KŽ, KARLOVAC
11. CEKOM ZA UKLANJANJE EKSPLOZIVNIH OSTATAKA RATA I NJEGOVIH POSLJEDICA u Zagrebu, HCR CTRO

PROMET I MOBILNOST

12. CEKOM ZA RAZVOJ DIJELOVA ZA AUTOMOBILSKU INDUSTRIJU - 6 LOKACIJA
13. CEKOM ZA RAZVOJ MOTORA I VOZILA, TE PRATEĆIH TEHNOLOGIJA - ZAGREB
14. CEKOM ZA UNAPRJEĐENJE KVALITETE U BRODOGRAĐEVNOJ INDUSTRIJI – RIJEKA
15. CEKOM ZA EMISIJU IZ MOTORNIH VOZILA U ZAGREBU, FSB

PREHRANA I BIO-EKONOMIJA

16. PANONSKI DRVNI CEKOM – VŽ, VIROVITICA
17. CEKOM ZA SLAVONSKI HRAST - VSŽ, VINKOVCI
18. CENTAR KOMPETENCIJA ZA ŠUMARSTVO I TEHNOLOGIJU PRERADE DRVETA -PGŽ, VRBOVSKO
19. CEKOM ZA AKVAKULTURU - DNŽ, STON
20. PLAVO-ZELENI CEKOM - ZŽ, ZADAR
21. CEKOM ZA INOVATIVNE PREHRAMBENE PROIZVODE - KKŽ, KOPRIVNICA
22. CEKOM ZA LANAC ZDRAVE HRANE - OBŽ, OSIJEK
23. CEKOM ZA RATARSTVO I POVRTLARSTVO/STOČARSTVO - VSŽ, VUKOVAR
24. CEKOM ZA NUTRICIONIZAM I DIJETETIKU U RABU, KBC REBRO
25. CEKOM ZA AGRUME U OPUZENU , DUBROVAČKO-NERETVANSKA ŽUPANIJA
26. CEKOM - AGRO CENTAR ZA STOČARSTVO I RATARSTVO, TRILJ

MULTISEKTORI

27. MEĐUSEKTORSKI CEKOM ZA KET – GRAD ZAGREB
28. CEKOM ZA NOVE TEHNOLOGIJE (CENT) – ZŽ, ZADAR
29. CEKOM ZA METAL (METRIS)* - IŽ, PULA
30. CEKOM ZA KREATIVNE INDUSTRIJE – ZŽ, ZADAR
31. CEKOM ZA INŽENJERSTVO I ICT- SDŽ, SPLIT
32. CEKOM ZA SMART GRADOVE – PGŽ, RIJEKA
33. CEKOM ZA KULTURNE INDUSTRIJE, SDŽ, SPLIT
34. CEKOM ZA ALUMINIJ – ŠKŽ, ŠIBENIK

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- Model 1
  - CoC is a research and knowledge-dissemination organization (RO) which conducts research and development projects in collaboration with undertakings.
- **Model 2**
  - CoC is an innovation cluster whose members are engaged in research and development activity.
- Model 3
  - CoC is a legal entity that operates the research infrastructure established by the bodies of local, regional or national administration.

• Model 2 – Innovation Cluster

– Eligible activity for Model 2 is development (construction, upgrade and operating costs) of innovation clusters as Centers of Competence. Innovation clusters mean structures or organized groups of independent parties designed to stimulate innovative activities.

– State aid is granted in the form of investment and operating aid for innovation clusters. Eligible activity is to conduct R&D by the members of the innovation cluster.

– State aid shall be granted to undertakings (members of cluster) for R&D projects conducted in effective collaboration on the innovation clusters' facilities for fundamental research, industrial research, experimental development, feasibility studies.

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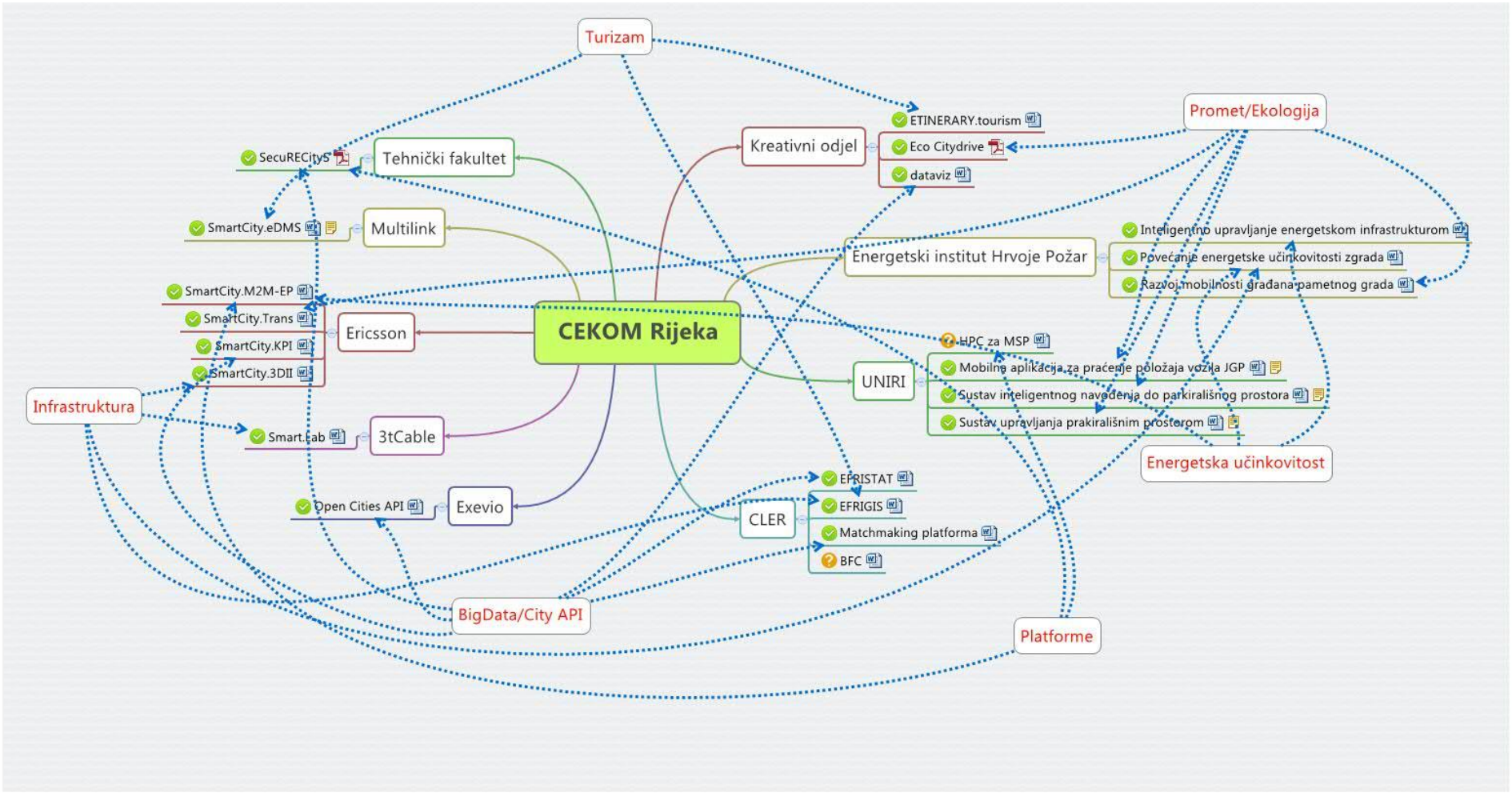


Smart Cities

Theory behind, definitions and other important stuff

- **Cyber cities**, from cyberspace, cybernetics, governance and control spaces based on information feedback, city governance; but also meaning the negative / dark sides of cyberspace, cybercrime, tracking, identification, military control over cities.

- **Digital cities**, from digital representation of cities, virtual cities, digital metaphor of cities, cities of avatars, second life cities, simulation (sim) city.

- **Intelligent cities**, from the new intelligence of cities, collective intelligence of citizens, distributed intelligence, crowdsourcing, online collaboration, broadband for innovation, social capital of cities, collaborative learning and innovation, people-driven innovation.

- **Smart cities**, from smart phones, mobile devices, sensors, embedded systems, smart environments, smart meters, and instrumentation sustaining the intelligence of cities.

Three perspectives shaping the landscape of Future Internet and City Development*

	Future Internet Research	Cities and Urban Development	User-Driven Innovation Ecosystems
Actors	Researchers ICT companies National and EU actors	City policy actors Citizen platforms Business associations	Living Lab managers, citizens, governments, enterprises, researchers as co-creators
Priorities	Future Internet technical challenges (e.g. routing, scaling, mobility)	Urban development Essential infrastructures Business creation	User-driven open innovation Engagement of citizens
Resources	Experimental facilities Pilot environments Technologies	Urban policy framework Organisational assets Development plans	Living lab facilities: methodologies & tools, physical infrastructures
Policies	Creation of advanced and testbed facilities Federated cooperation Experimental research	City policies to stimulate innovation, business and urban development Innovative procurement	User-driven innovation projects Open, collaborative innovation

*H. Schaffers et al: Smart Cities and the Future Internet: Towards Cooperation Frameworks for Open Innovation

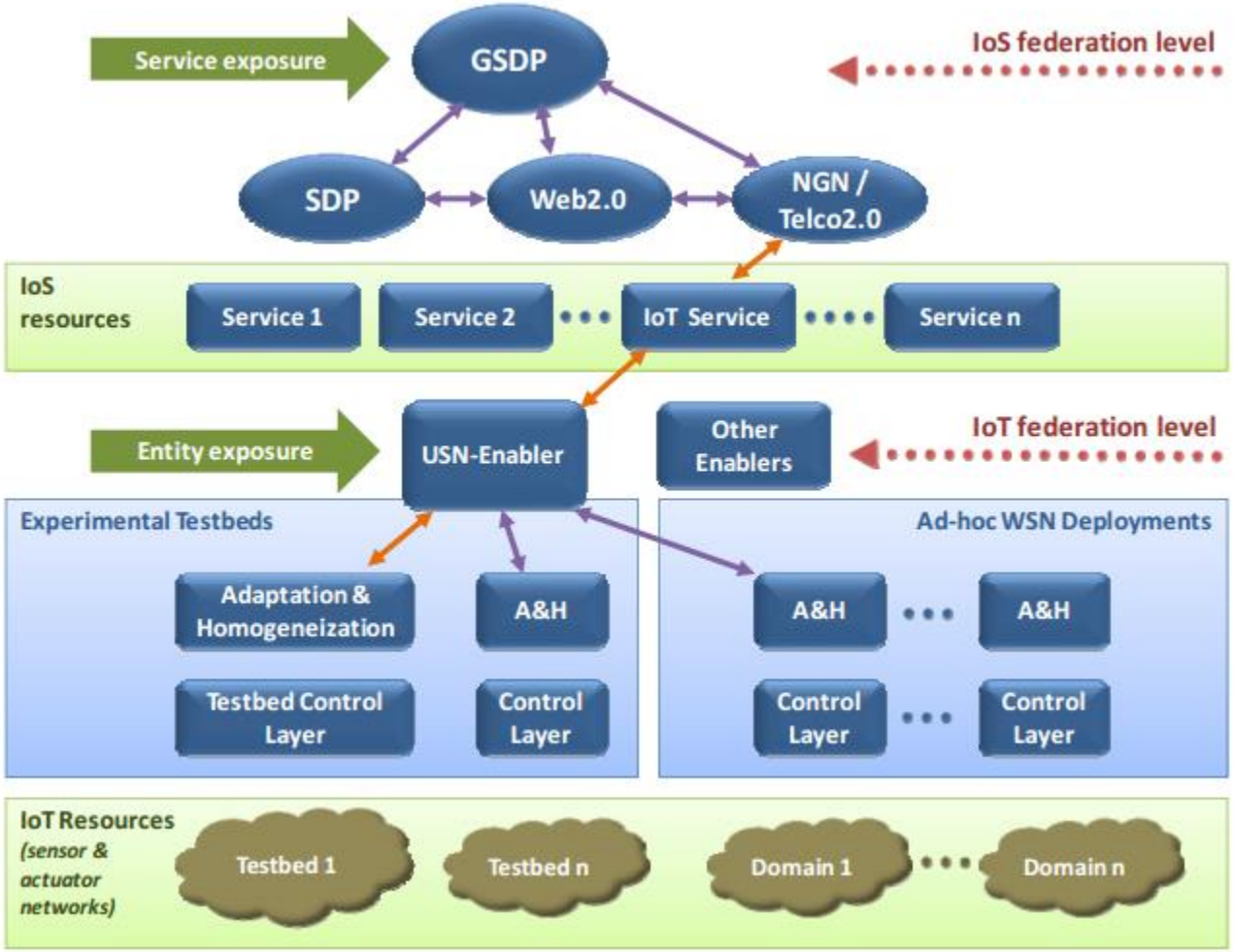
Main pillars for a SmartCity environment

- **The Internet of Things (IoT):** defined as a global network infrastructure based on standard and interoperable communication protocols where physical and virtual “things” are seamlessly integrated into the information network.

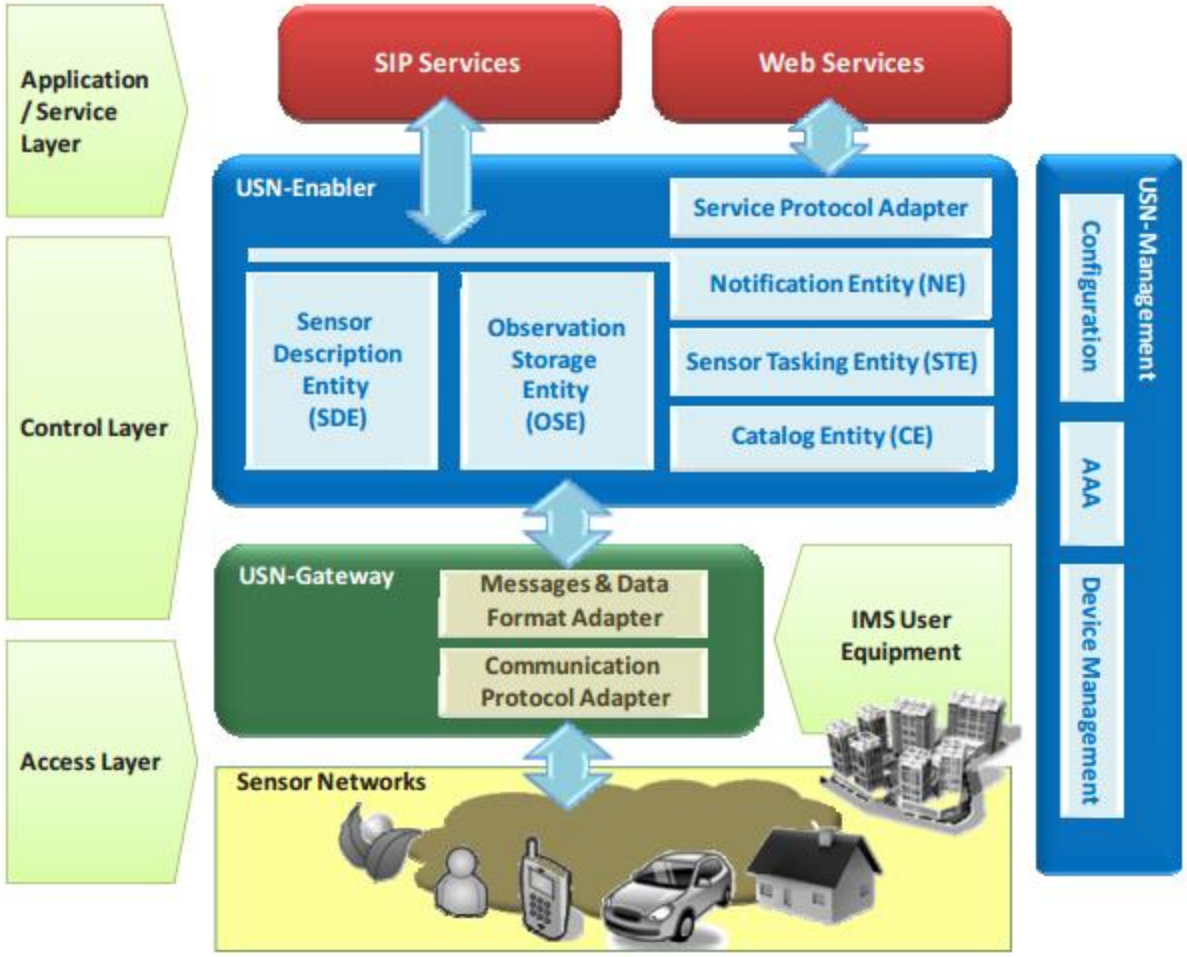
- **The Internet of Services (IoS):** flexible, open and standardized enablers that facilitate the harmonization of various applications into interoperable services as well as the use of semantics for the understanding, combination and processing of data and information from different service provides, sources and formats.

- **The Internet of People (IoP):** envisaged as people becoming part of ubiquitous intelligent networks having the potential to seamlessly connect, interact and exchange information about themselves and their social context and environment.

Global Service Delivery Platform (GSDP) integrating IoT / IoS building blocks



High-Level Architecture of a USN IoT Platform

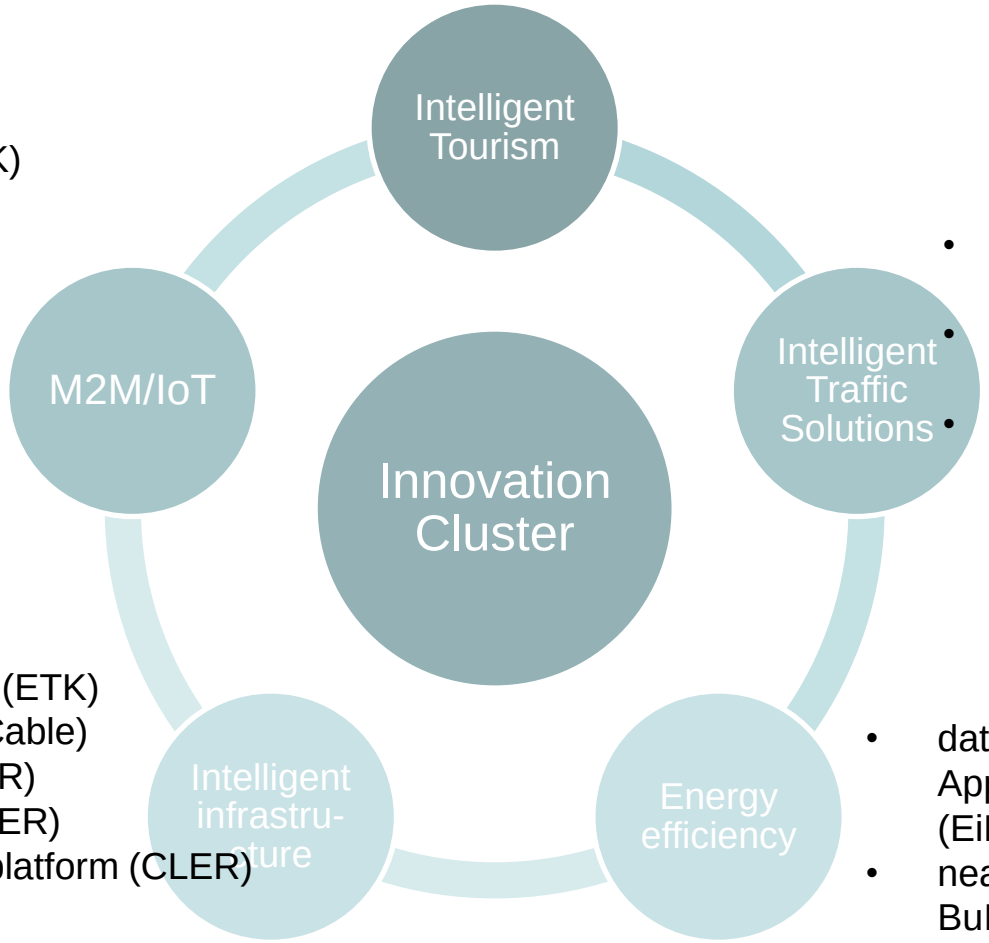


CoC for Smart Cities

… in Rijeka

- SmartCity.eDMS (Multilink)
- EITINERARY.tourism (Kreativni odjel)

- SmartCity.M2M-EP (ETK)
- SmartCity.KPI (ETK)
- OpenCities API (Exevio)
- Dataviz (Kreativni odjel)

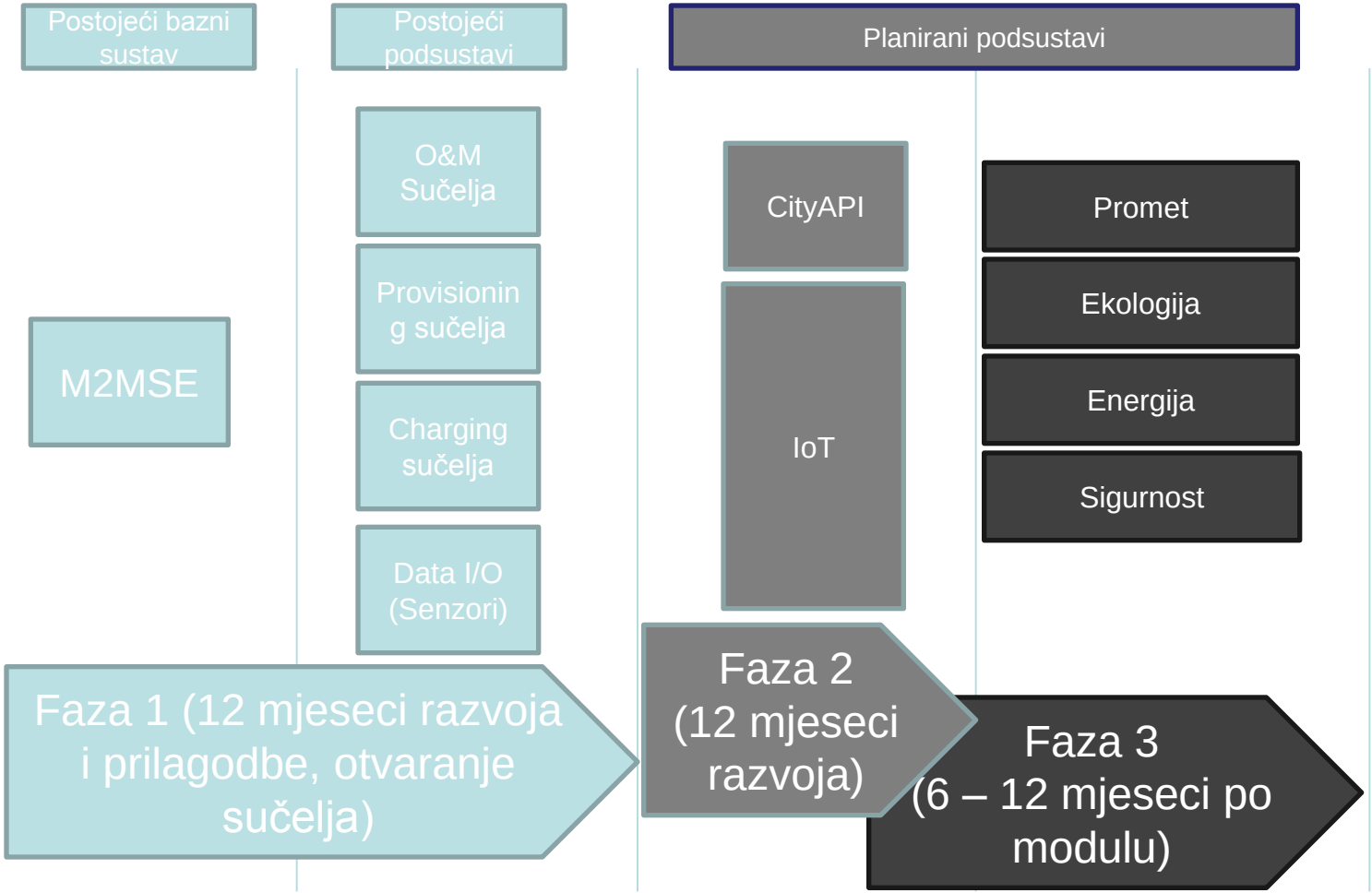


- SmartCity.Trans (ETK)
- Eco City Drive (Kreativni odjel)
- SMArt MObile CitizeN (EiHP)

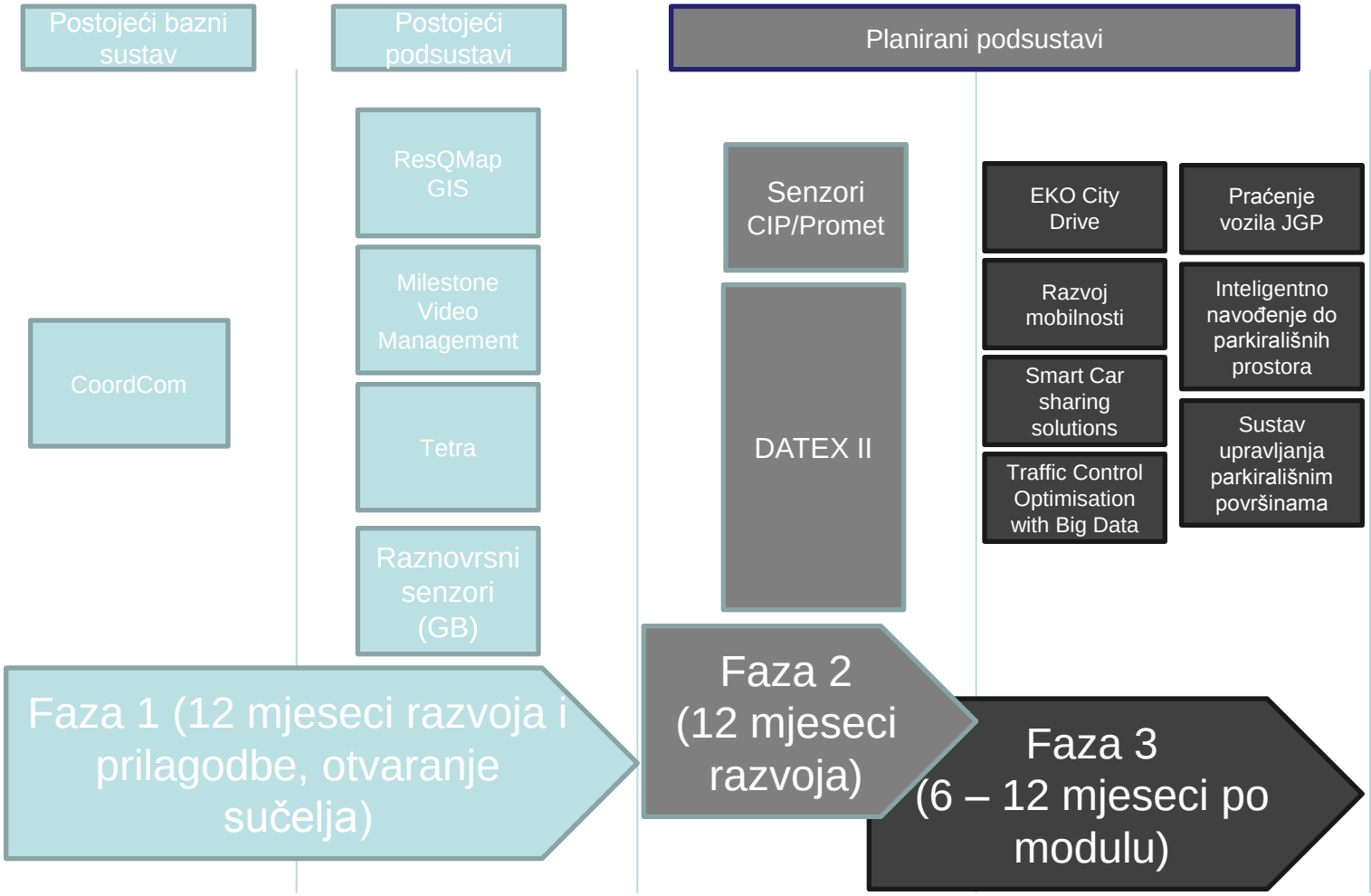
- SmartCity.3DII (ETK)
- Smart.Lab (3tCable)
- EFRIGIS (CLER)
- EFRISTAT (CLER)
- Matchmaking platform (CLER)

- dataBASE for ENerGy Applications (EiHP)
- nearly NEt Zero Energy Bulding) (EiHP)

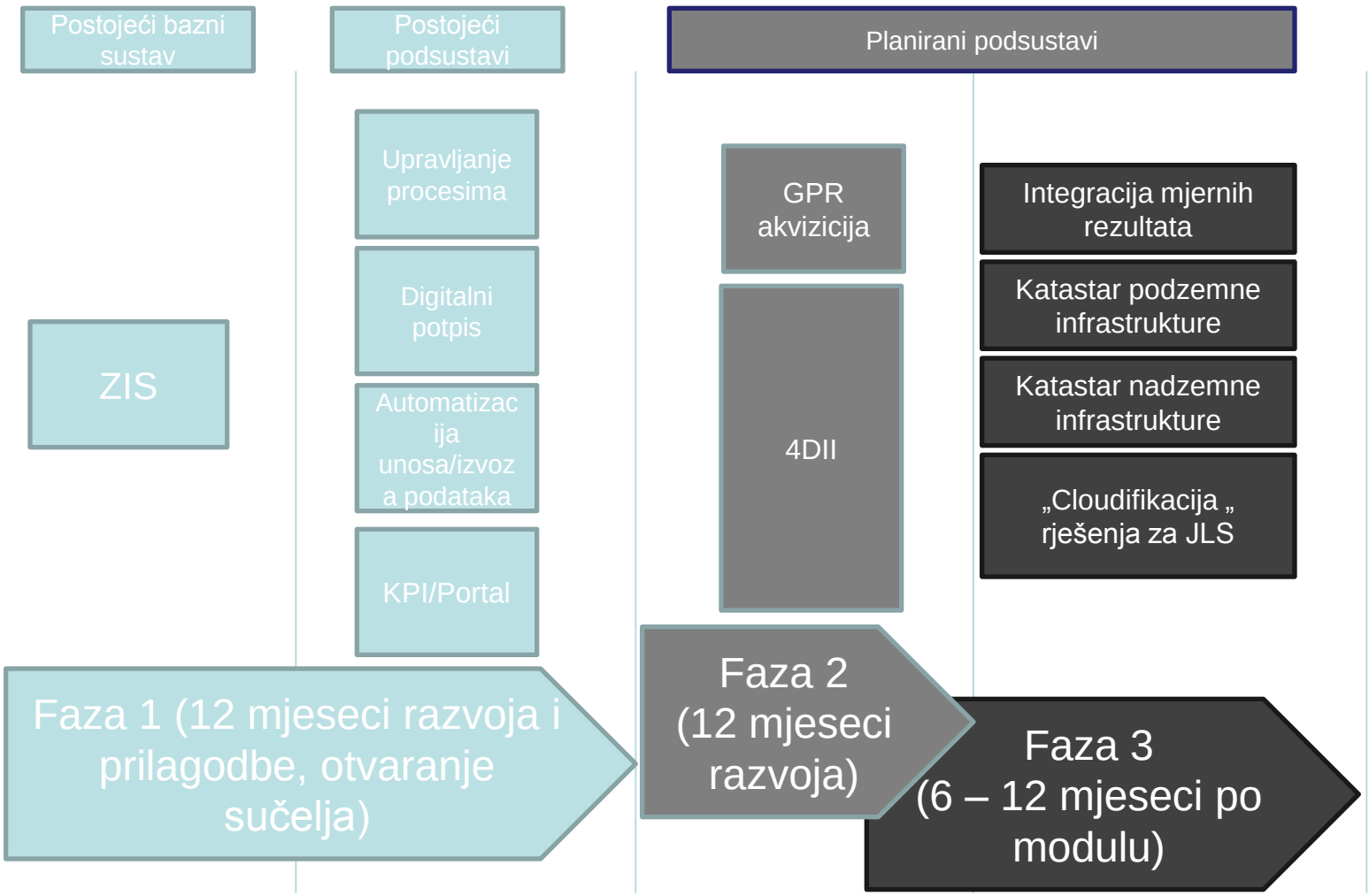
SmartCity.IoT



SmartCity.Transport



SmartCity.4DII



Current status

- Expert team (after the signing of the agreement on cooperation on the establishment of the competence Centre for SmartCities) collected 19 project ideas for the development of final products in the areas of smart cities
- CEKOM Development Strategy for smart cities is created
- The status of ***the project of the national interest*** was obtained from the ICT industry's Competitiveness Cluster
- Waiting for S3 approval, public discussion, government approval, etc.

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http://www.ericsson.com/thinkingahead/networked_society/city-life/city-index/

http://www.oecdbetterlifeindex.org/responses/