



CREW

Cognitive Radio Experimentation World



Experiment-based Validation of Control Channels for Cognitive Radio Systems (EVOLVE)

- Provisional results of one out of four experiments of 'Open Call 2' -

Problem

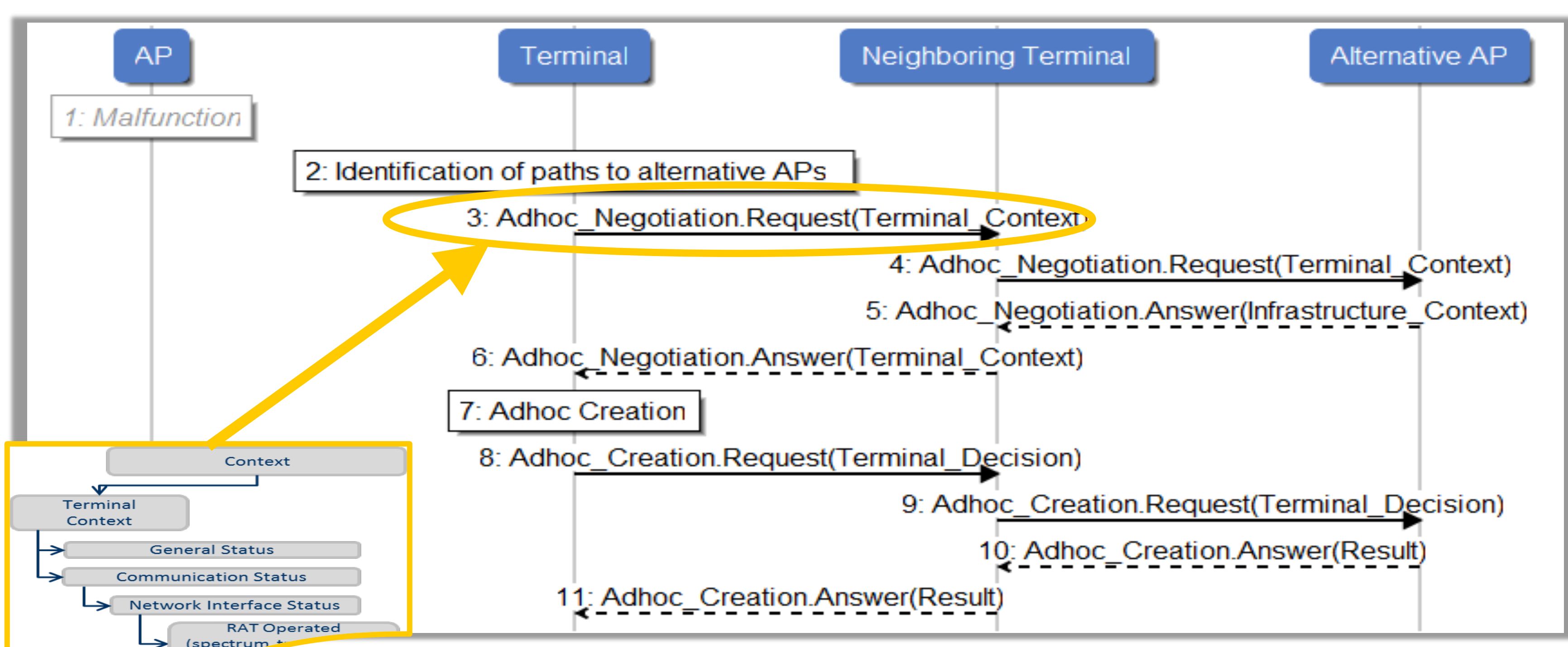
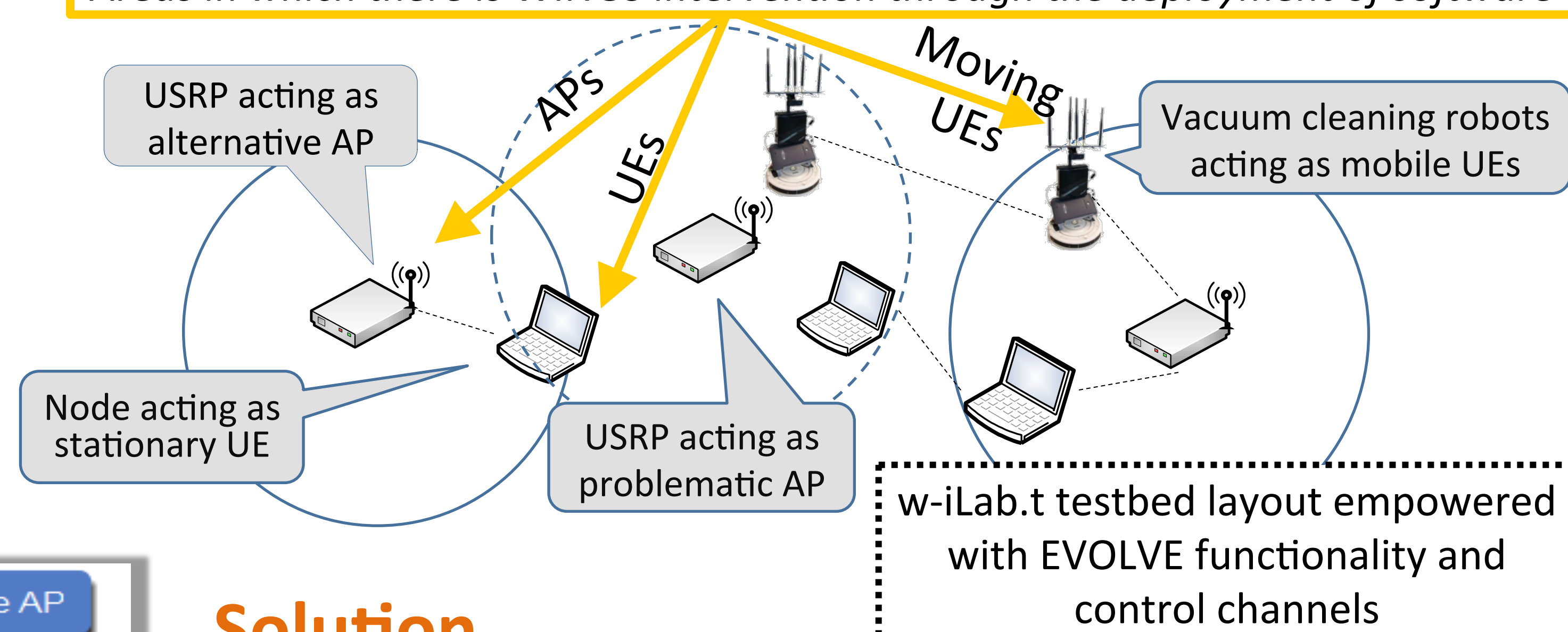
Control Channels for Cognitive Radio Systems (CC-CRSs) are

- a key feature for supporting CRSs in their operation
- conveying info on the: **context** of operation, **profiles**, **policies**

BUT **experiment-based validation** of CC-CRSs is missing

- CREW platforms can provide this opportunity

Areas in which there is WINGS intervention through the deployment of software



Opportunistic coverage expansion scenario: exchanged messages and data structures

Solution

- **experiment-based validation** of CC-CRSs can be done on the CREW testbeds
- based on the Java Agent Development (**JADE**) framework
- **scenarios** include:
 - Opportunistic coverage expansion
 - Opportunistic capacity expansion of the infrastructure;
 - Bootstrapping of terminals
 - Coordination of diverse radio networks and nodes for secondary spectrum usage

Experimental coexistence study in TV bands (CREW-TV)

- Provisional results of one out of four experiments of 'Open Call 2' -



Problem

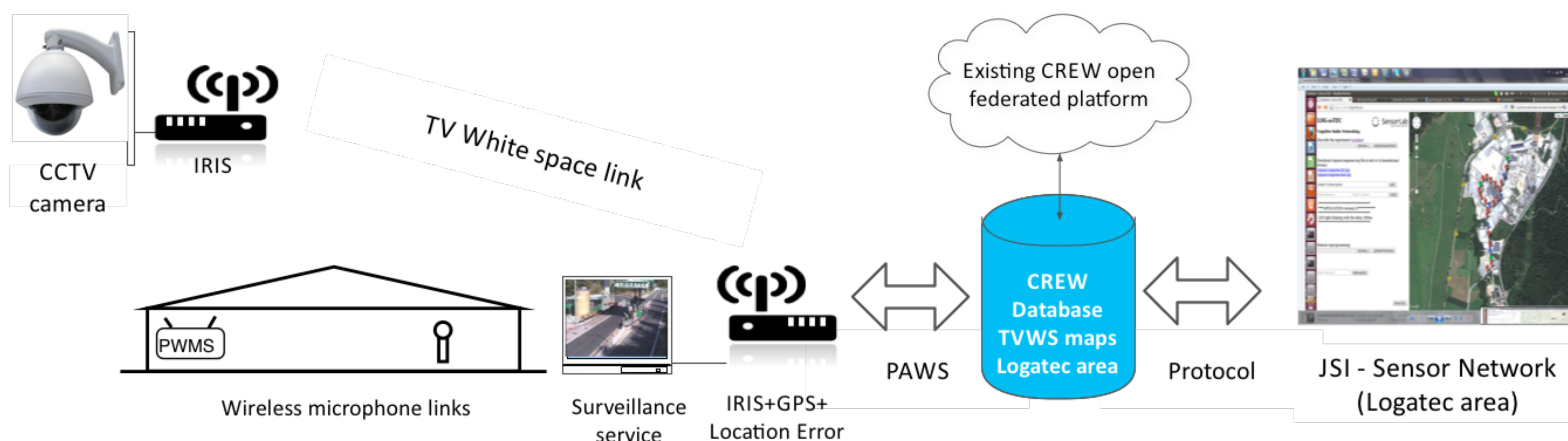
Geo-location database + spectrum monitoring is promising for

- the effective use of **TV white spaces (TVWS)**
- successful **coexistence** with dynamic incumbent systems (e.g. wireless microphones that are not registered in a database)

BUT **how to conduct trial experiments with this hybrid solution?**

Solution

- **TVWS transmission trials** using CREW testbed in Slovenia
- assess the benefits of **combining the white spaces database with a distributed sensing network** for wireless microphones
- Develop and populate a **Web-based geo-location database** for TVWS
- Implement a **communication protocol** to connect white space devices with the TVWS database.



Overview of the CREW-TV experiment



Contact:

Ingrid Moerman, iMinds, Belgium
(ingrid.moerman@intec.ugent.be)



Website:

<http://www.crew-project.eu>

Future Internet Research and Experimentation – FIRE

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