



# Exploitation of the results

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# Objectives

- ❖ **To distribute appropriate information to each type of identified target so that each group be able to easily use and apply the information it is concerned**
- ❖ **To maintain the viability of the project results**
- ❖ **To manage very carefully sensitive information**



# The outputs

- ❖ **Public dissemination Material**
- ❖ **Technical recommendations**
- ❖ **Summary report for the European Commission**



# Exploitation of results for Railways

- ❖ **Dissemination of the technical recommendations**
  - ❖ UIC/UNIFE TecRec development process
  - ❖ Website, extranet
  - ❖ Presentation in related conferences and workshops
  
- ❖ **Organisation of a common workshop with UIC ARGUS project to present both results**
  
- ❖ **Feed the results in other related research projects**



# Exploitation of results for Providers

## ❖ Collaborative projects

- ❖ Shift2Rail project within Horizon 2020, ...

## ❖ Publications

- ❖ IRSE, UNIFE and other press dedicated to the railway transportation domain.

## ❖ Adaptation of the signaling products

## ❖ Participation in standardization framework

- ❖ Cyber Security within UNISIG, ERA and ETCS User Group core teams.



# Exploitation of results for Scientific community

- ❖ **Internal seminars / training programme / student courses**
- ❖ **Publications in conferences and journals**
- ❖ **Contribution to new standards**
  - ❖ IEC, ETSI, CENELEC
  - ❖ Inclusion in linux Kernel
- ❖ **Feeding new research projects at national or european level**



# Perspectives (1)

## Protocols and terminals

In a context where wireless communications are the future for a lot of critical domains: Railway, Automotive, Telemedecine, Energy...

Monitoring the EM environment will be a necessity  
To optimize the use of the frequency spectrum  
But also to detect intentional jamming situation

For critical applications.....Security protocols could be accompanied by communication quality indicators and environment quality indicators and why not jamming indicators (security indicators?).

The detection could be inside the terminals in order to facilitate the combining between the detection information and a network management.





# Perspectives (2)

## Global approaches

Jamming is a type of attack among many types of cyber attacks possible  
- fake BTS equipment, Intrusion, Modification of information, deny of service, spoofing, man in the middle...

So we need to work on global detection approach,

based on the monitoring of different/variable parameters  
(throughput, radio frequency spectrum, KPIs, offending waveforms,  
heart beat monitoring, unexpected transmitter locations)





# Perspectives (3)

## Numerical societies

Jamming can be a particularly stealthy method to attack installations. Jamming can involve damages but, in many case, it won't be possible to identify the real cause.

The diagnostic will be technical failure.

In a numerical society, this type of attack can be very damaging and yet go unpunished.

Monitoring and detection is necessary :

To react quickly and well to counter the effects of the attack

But also

To make the proof that we are victim and detection will be necessary to conduct legal action.



The project SECRET aims to assess the risks and consequences of EM attacks on the rail infrastructure, to identify preventive and recovery measures and to develop protection solutions to ensure the security of the rail network, subject to (...) [Read more...](#)

**SECRET**  
PROJECT  
  
SECURITY OF RAILWAYS AGAINST  
ELECTROMAGNETIC ATTACKS

**FINAL  
CONFERENCE**



**Lille, 29 October 2015**

  

## News

**UIC eNews ARGUS / SECRET meeting**  
(Paris, 28 January)

**UIC eNews UIC participates in Transport  
Research Arena "TRA 2014", the "European  
capital of Transport this week" (...)**

**UIC eNews ARGUS kick-off meeting** (Paris,  
19 March 2014)

**UIC eNews Great success of the 9th UIC  
World Congress on Railway Security held in  
Paris**

**UIC eNews SECRET project** (Bilbao, 3 – 4  
July 2013)

**Final conference**

**About**

**Project structure**

**Consortium**

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