



# Study on evolution of communication demands

11/09/2013,  
UIC Conference



### COMMUNICATION NETWORKS AND RAILWAYS ARE EVOLVING...

- 1 Technical evolution towards IP, wideband connection and other wireless technologies, in coexistence with GSM
- 2 Some years after the installation of GSM-R is in force in the Trans European Network lines, its deployment is still continuing. There is a significant expertise in the use of the network and there can be some lessons learnt to be shared.
- 3 Increasingly advanced signalling systems (such as ERTMS) are being installed: the needs of the railway networks with these systems are different to the ones without them
- 4 The European experience is taken as a model for railways all over the world, who want to use the same advanced signalling and other systems, willing to benefit of the economy of scale

... NEEDS ARE ALSO EVOLVING...



### WHAT TO DO?

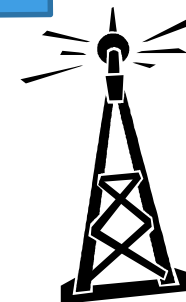
- \* ERA, in its role of ERTMS System Authority, is tasked by EC to define the legal aspects of the evolution path of the communication networks in Europe
- \* This can only be done with the cooperation of all the involved actors: industry, organizations, railway sector...
- \* The aim is to define the minimum set of requirements to be in force in Europe ...
- \* ... while allowing technical evolution and adaption for the markets worldwide



## HOW TO ORGANIZE THE WORK?

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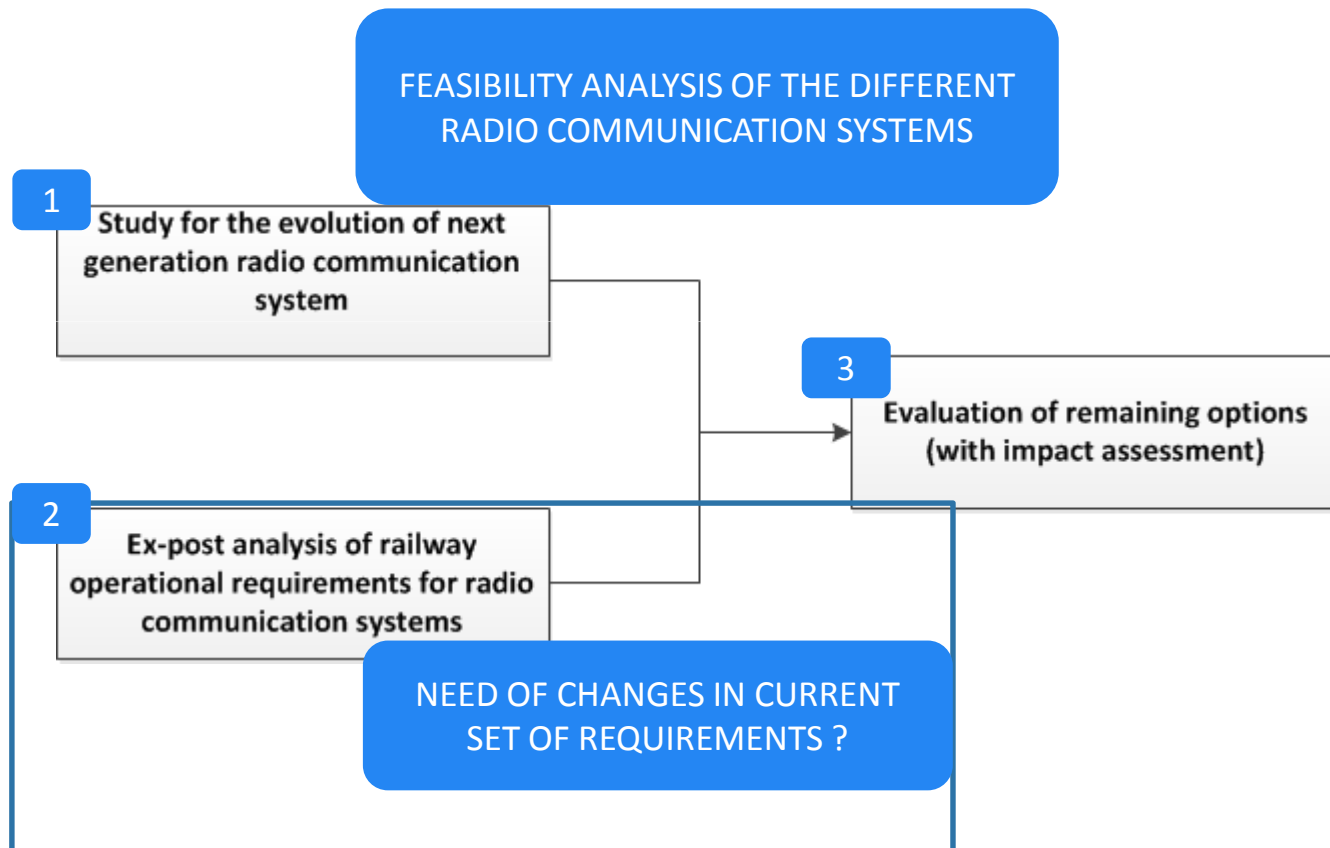
**Cooperation is the key**



**Industry**



# Scope – Defining the requirements of the next generation radio communication system





## SCOPE OF THIS ANALYSIS?

- Scope 1: evaluation of **existing** operational requirements for railway radio communication systems
- Scope 2: identification of potential **new** operational requirements for railway radio communication systems

## WHY PERFORM SUCH ANALYSIS ?

- Before defining any options for next generation radio communication system, the lessons learnt of the existing railway operational requirements must be known;

*“Get it right at the first time...”*



## IN SCOPE:

- The study shall identify the possible need for changes in the existing set of operational requirements for voice and ETCS data communication;
- The study shall qualitatively describe the **benefits of possible changes to the existing set of operational requirements** looking for the optimal level of specifications (why is the operational requirement needed?; what if the operational requirement is not implemented);

## NOT IN SCOPE:

- The study shall not quantify the economic cost of implementation of each possible change of operational requirement; (as this depends also on the cost of implementing these changes in the next generation communication system)
- The study shall not quantify the costs of existing GSM-R implementations (including e.g. capacity load) (the study is **not an ex-post analysis of the economic part of GSM-R**)



## Questionnaire - Structure

- **PART 1 : REQUIREMENTS RELATED TO VOICE APPLICATION**
  - Requirements related to punctuality of railway system;
  - Requirements related to safety of railway system;
  - Specific questions related to national implementations in respect to EIRENE specifications and specific GSM-R functionalities;
  
- **PART 2: REQUIREMENTS RELATED TO ETCS DATA APPLICATION**
  - Requirements related to punctuality of railway system;
  - Requirements related to safety of railway system;
  - Specific questions related to national implementations in respect to EIRENE specifications;
  
- **PART 3: REQUIREMENTS RELATED TO OTHER DATA APPLICATIONS**





- Methodology + Questionnaire** : **June 2013 – September 2013**
- Answers of questionnaires** : **October 2013 – December 2013**  
(including bilateral meetings)
- Summary of answers** : **Beginning of 2014**  
(including possible workshops)
- Brainstorming session** : **Q1 2014**
- Final report** : **April 2014 – June 2014**  
(including possible changes in railway operational requirements on radio communication systems)