ICT contributions and challenges for logistics innovation

Zaragoza, 25th of October 2013

European Commission

SEVENTH FRAMEWORK PROGRAMME

ECITL Parallel B (Friday 12:30):

ICT contributions and challenges for logistics innovation

Moderators: Georgia Aifadopoulou, Fernando Liesa

Participants: Margherita Forcolin, Andreas Kirchhainer, Jens Schumacher, Stefano Persi and **YOU!!!**

Feed ALICE roadmap on ICT for Logistics with your ideas

Contribute with your thoughts on the following

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- Review draft **vision and scope**
- Identify and define research and innovation **challenges and gaps**. What needs to be done?
- How to **measure progress** made on ICT for logistics and supply chain

ALICE WG3: Information Systems for Interconnected Logistics

Vision

Supply chains that are fully integrated and coordinated by the use of ICT solutions available and affordable for all kind of companies and participants, whether large or small, to rapidly setup and tear down supply chain networks.

Mission

Identify and define research and innovation challenges including the development of technologies and standards that facilitate the closure of the existing gaps in current ICT systems and their application to supply chains so that the very best performance in the execution of supply chain activities can occur, including large or small participants.

Scope: Research and Innovation Areas and Challenges

Modern supply chains are complex networks of independent organizations working together to move and transport goods from conditions of lower value to ones of higher value. The complex nature of these networks requires that the various actors operating in them coordinate their actions in a highly integrated manner if desired outcomes are to occur. Unfortunately, the current state of ICT systems are such that only the most technology savvy and capital rich organizations can successfully participate in, or manage, these complex networks. The high cost of current ICT systems, and the level of technical sophistication necessary to integrate and operate them, excludes all but the largest logistics players. These factors work to the disadvantage of SMEs who have neither the capital resources necessary to purchase the sophisticated ICT required, nor the technical resources necessary to operate these systems. Besides disadvantaging SMEs, the current state of ICT in the industry also discourages innovation. Once supply chain partners have managed to setup a network, integrating participants and establishing rules for their management, it is very difficult for them to change their processes. For this reason, novel technologies, such as auto ID technologies or other sensor based tools are generally ignored since they would require fundamentally changing the networks that have been established through the costly efforts of the current partners.

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WINNI
European Platform Driving KnoWledge to INNovations in Freight Logistics

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Logistics innovation for a more competitive and sustainable industry

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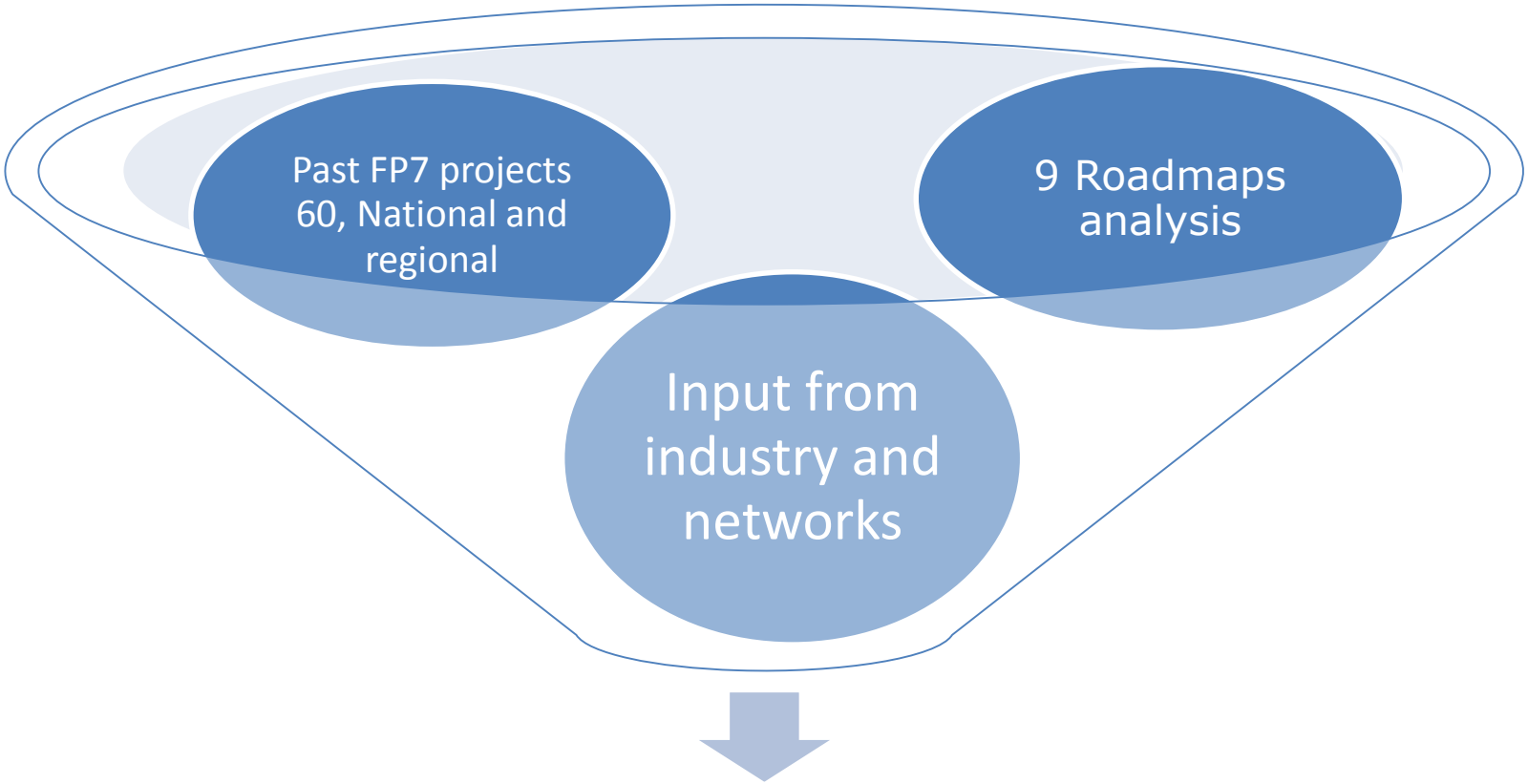
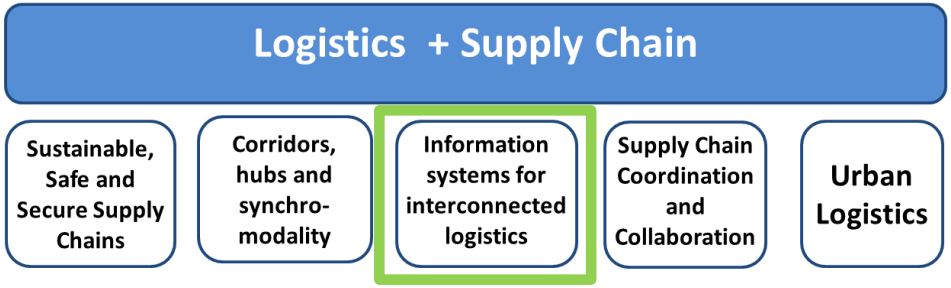
Input for the Horizon 2020 first calls



From 50 initial topics ALICE proposed 21: Prioritized by the Steering Group



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Topic	Mark*
8. Governance and business models for readiness of Internet of Freight	117%
9. European Logistics Information Sharing Architecture	112%
10. Improved cross-border data exchange in multimodal transport chains including customs information	105%
11. ICT platform for empty container repositioning	98%
12. European Interoperability for Integrated Freight Management	68%

*Relevant importance of the topic for ALICE steering Group Members.

Status:

European Commission took ALICE input and prepared the draft of the Work Programs with the contents of the 1st calls of HORIZON 2020 opening in December 2013:

- Most of the general challenges identified by ALICE are in the draft of the Work Program.

- Descriptions are more general, however ALICE would like to promote that proposers go into the details of the topics proposed by ALICE.

ALICE Roadmaps:

Paving the way from 2016-2020

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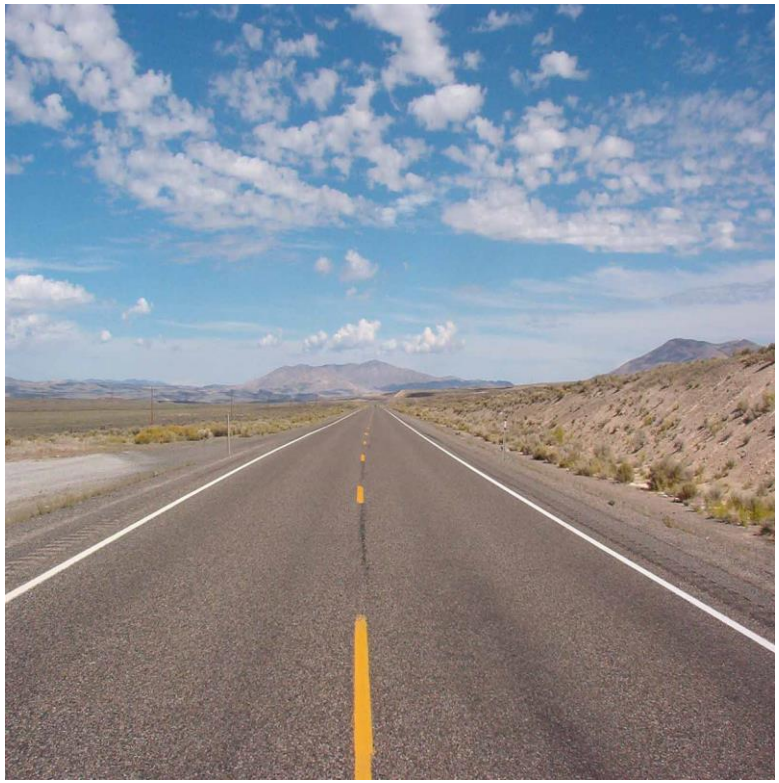
Define research and innovation strategies, roadmaps and priorities to achieve the ETP on Logistics vision. These items will assist the European Commission in the definition of Research and Innovation Programs, i.e. HORIZON 2020



Roadmaps Structure

- Executive summary
- Introduction
  - General expectations, scope of the roadmap and approaches
  - Overview of past projects/initiatives
  - Complementarities with other ALICE roadmaps
- Challenges, themes and topics
- Milestones and timelines graphs

Roadmaps Structure

- **Milestones** and timelines graphs

What should be achieved when in relation with the identified research and innovation items identified.

Example:

Tailored Trucks & Load Carriers	**Milestone1** Milestone 1: 2015 Market 2018-2020	**Milestone 2** Milestone 2: 2020 Market 2023-2025	**Milestone 3** Milestone 3: 2025 Market 2028-2030
Cost effective architectures **Configurable modules** **Aerodynamics & Light weight solutions**	Optimised vehicle parameters for efficient transport operation. More flexible vehicle leasing concepts. Vehicle optimised for Green Corridors. Aerodynamically efficient complete vehicle (tractor and trailer), Systematic re-design and material optimisation.Both traditional and novel composites.	Vehicle fully adapted to its operation and freight. Modularity Inter-modal efficiency. Vehicle optimised for all infrastructure. Improved aerodynamics, more flexible directives, new vehicle combinations Novel materials optimally used through multidisciplinary optimisation. Multi-functional materials. Lower weight and better performance.	Vehicle dedicated to its operation Efficient, real time, flexible truck. Adaptable exterior geometry, suspension, air gap and speed control, 20% drag reduction. Significant weight reduction, integrated design of components in optimal material. Nanomaterials with multifunctional properties

Roadmaps Structure

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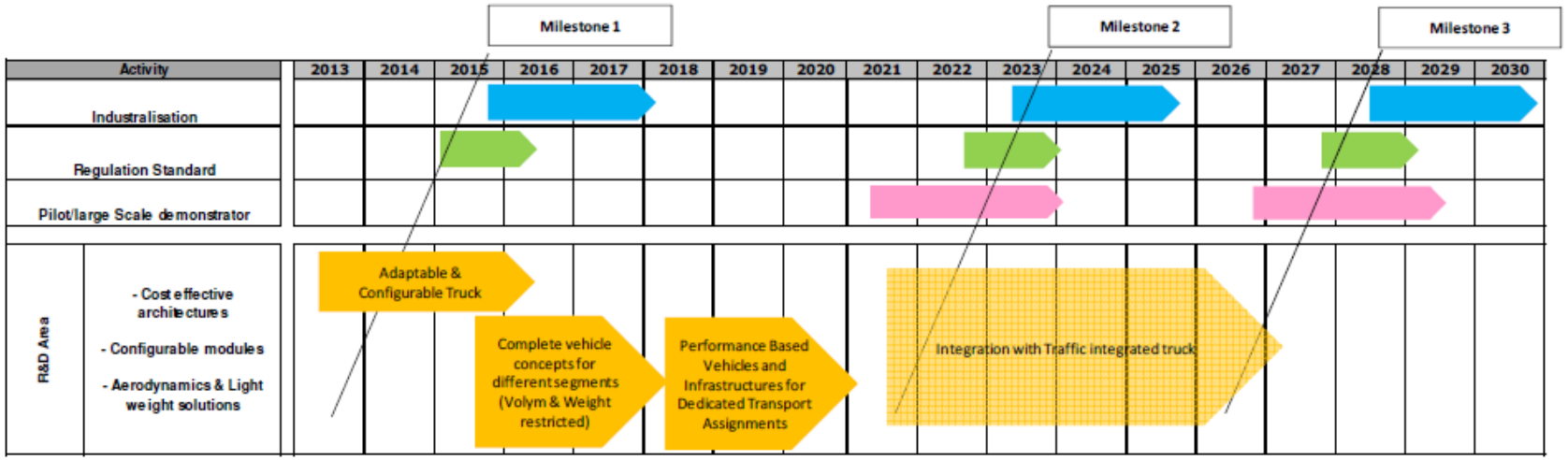
- Milestones and **timelines graphs**

Which kind of activities (research, demo, standar, market) are expected and when.

Example:

5.1 Tailored Trucks & Load Carriers



Research and Development | Demonstration | Regulation, standardisation | Market introduction

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PROGRAMME

WG Work Plan timeline

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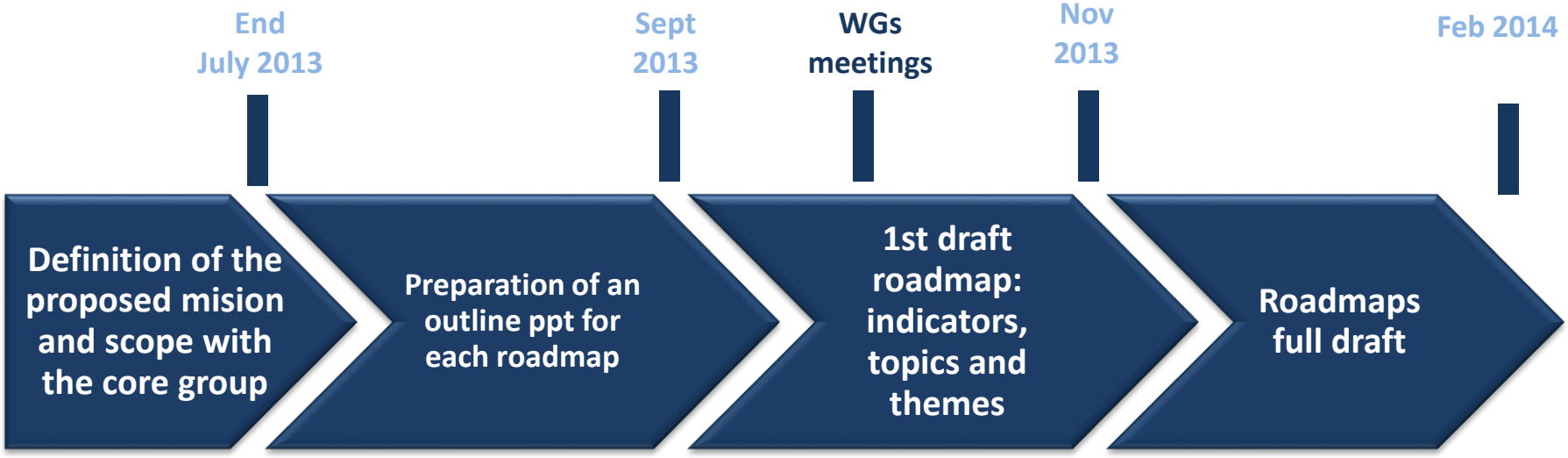

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ALICE WG3: Information Systems for Interconnected Logistics

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- **Harmonized communication** between supply chain partners that facilitates the rapid and simple connection of all partners including governmental agencies, customs authorities, shippers, third party service providers and any other entity required to ensure the proper functioning of the supply chain;
- Simple **connection and integration tools** to facilitate usage by non-technical personnel software utilities that allow SMEs to properly manage their portions of a supply chain
- **Simple and cost effective sensors or smart devices integration into supply chains**;
- Open and standardized **visibility and event management** systems that allow supply chains to be managed efficiently and effectively;
- **Secure and trustworthy data management**.
- **Accounting processes to report performance**: tracking of societally important factors such as carbon emissions, fuel consumption, safety, etc.