

MAPPER

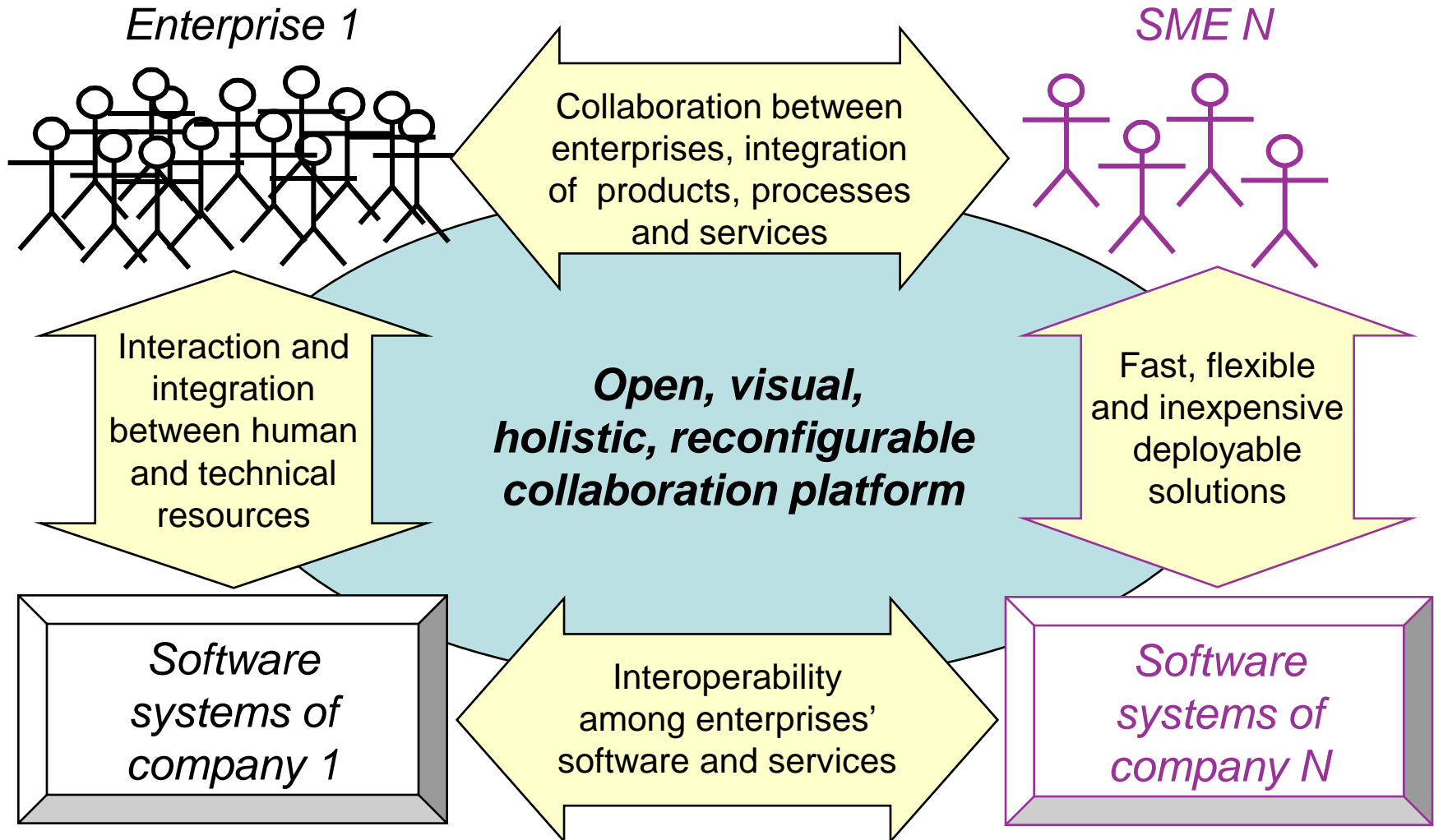
*Model-based Adaptive Product and Process
Engineering*

Project Proposal for
IST-NMP-1 Integrating Technologies for the
Fast and Flexible Manufacturing Enterprise

CRF
Evatronix
Chipldea
Kongsberg Automotive
Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (FhG/IPSI)
Silesian University of Technology (SUT)
FernUniversitaet in Hagen (FernUni)
Ingeniörhögskolan i Jönköping AB (Jönköping University)
University of Trento
Trouw Technologies AS
Stiftelsen for industriell og teknisk forskning ved NTH - SINTEF

MAPPER Vision

In 2010, agile manufacturing companies can inexpensively form collaborative networks and quickly adapt to market demands.



MAPPER Overall and Business Objectives

MAPPER will enable fast and flexible manufacturing by providing methodology, infrastructure and reusable services for participative engineering in networked manufacturing enterprises, demonstrating practical benefits and scientific values in three industrial pilots.

1. Reducing cycle times and time to market by ~10% through enabling adaptation to market demands;
2. Increased quality of products and lower costs by decreased product and process late detected design errors by ~20%;
3. Increased innovations by ensuring participation of all the groups of stakeholders from 10% to 100% (Measured by model changes triggered by others than the core design group);
4. Enable SME participation in the manufacturing networks by reducing effective collaboration networking costs by ~50% and
5. Increased competitiveness of SMEs by participation in manufacturing networks

MAPPER Scientific and Technological Objectives

O1: *Reconfigurable visual enterprise models* of products, processes and other enterprise aspects

O2: *Participative engineering methodologies*, enabling joint product and process design, interdisciplinary and inter-organisational collaboration throughout multiple product lifecycles

O3: *Customisable work environments* for different stakeholders, roles and tasks

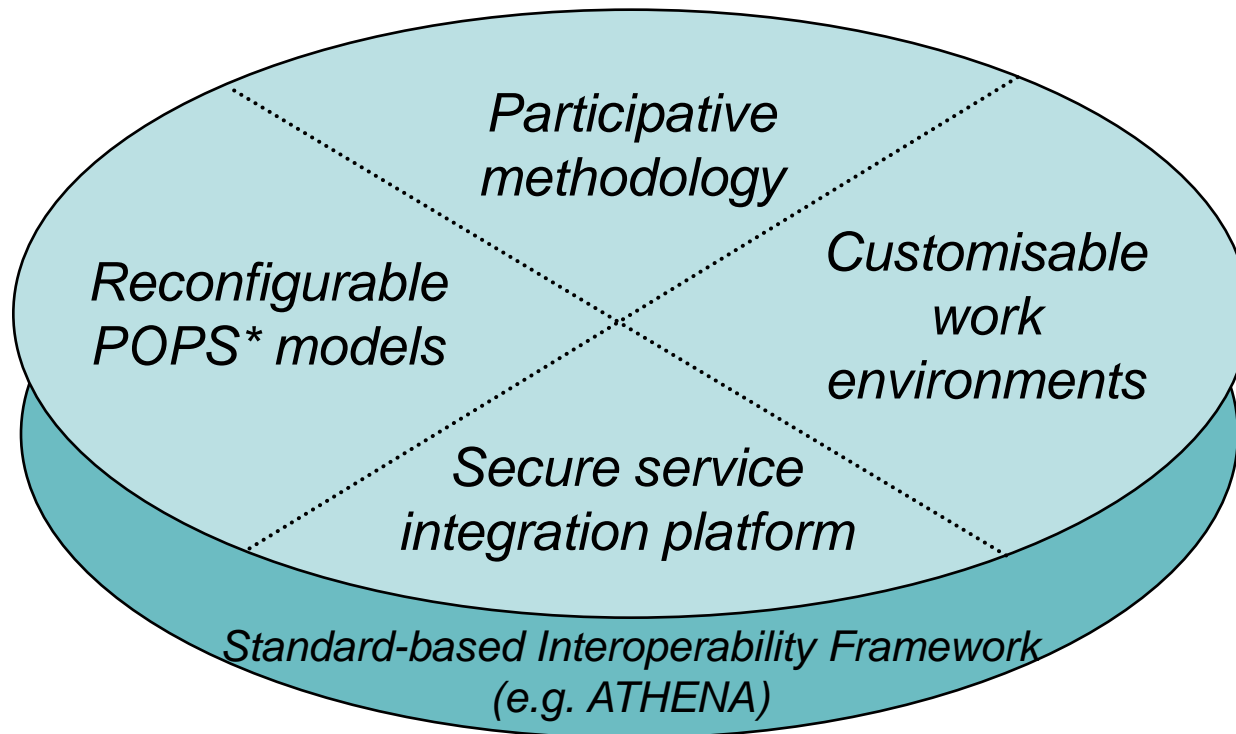
O4: *Secure collaboration platform*

O5: *To develop and assess three industrial use-cases, and to validate the overall MAPPER approach*

O6: *To ensure early and continuous exploitation*

MAPPER Solution and Result

Integrate enterprise modelling, human-centred methodologies, collaborative customisation, and secure, distributed tool invocation, into an open, visual, holistic, and reconfigurable collaboration platform

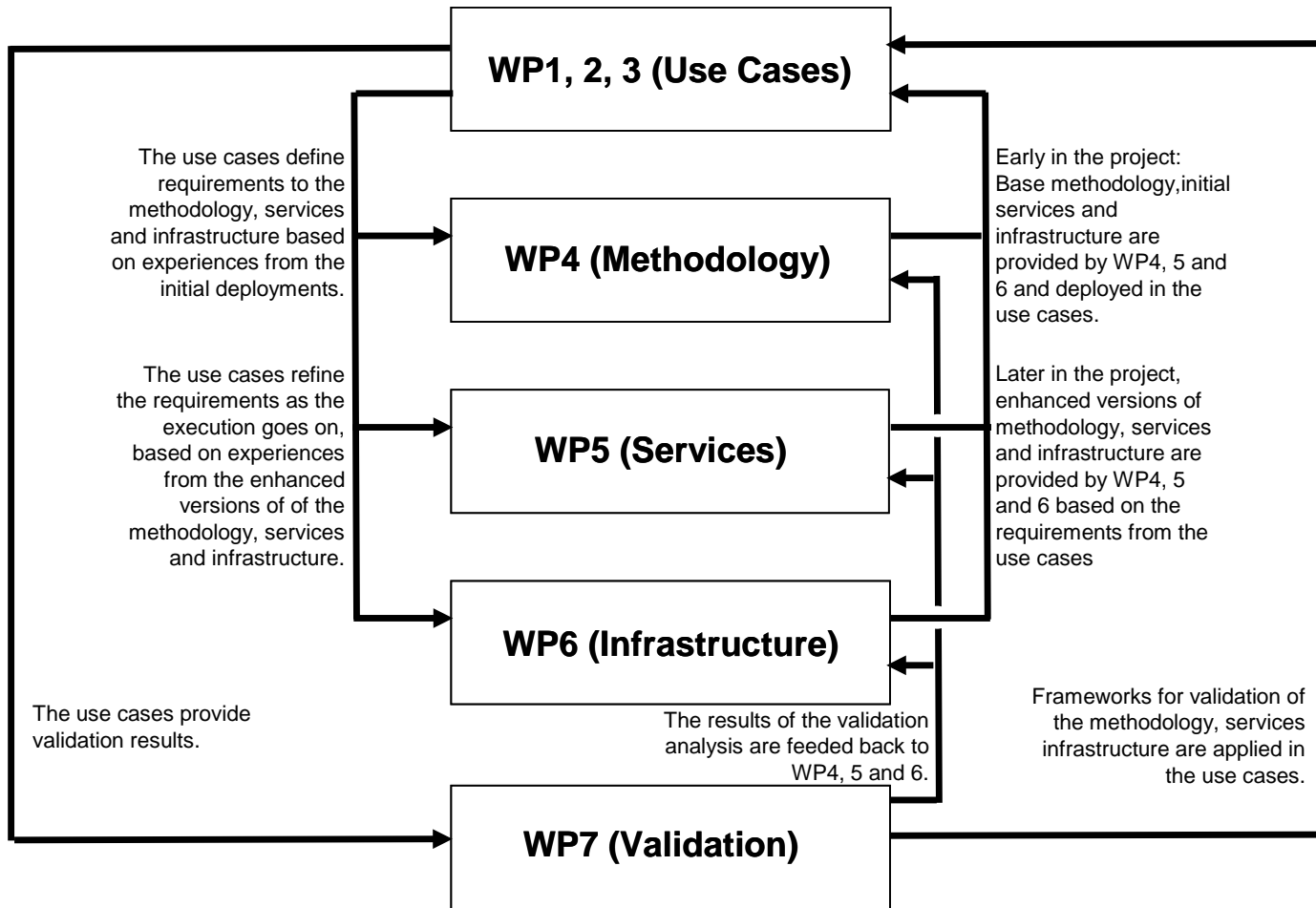


* *Processes, Organisations, Products, Systems*

MAPPER Partners and roles

Partner	Roles of partner	Efforts by partner
1 CRF	Use case partner, business partner, research partner, administrative co-ordinator	32 person months
2 Evatronix	Use case partner, business partner, SME	20 person months
3 Kongsberg	Use case partner, business partner	25,5 person months
4 Troux	Service provider, business partner	32,5 person months
5 SINTEF	Research partner, technical co-ordinator	28,5 person months
6 FhG/IPSI	Service provider, research partner	29,5 person months
7 SUT	Service provider, research partner	43 person months
8 Trento	Research partner	40,5 person months
9 FernUni	Research partner	31 person months
10 Jönköping University	Research partner	28,5 person months
11 Chipidea	Use case partner, business partner, SME	20,5 person months

Overall project structure



MAPPER Benefits

- Using MAPPER results, enterprises can transform into networked organisations and foster fast and flexible product and process engineering
- Cooperation and knowledge sharing will be facilitated across disciplines, organisational and national borders, through adaptive views of models supporting collaborative work, but also capturing multiple local perspectives
- This will result in more effective operations, improved knowledge elicitation and management, innovative designs, and increased business opportunities
- Our approach seeks to extend Europe's competitive advantage, such as the agility, skills and competence of the workforce, and the requisite strengths of diverse economies in the new Union
- The project brings together large manufacturers and SME suppliers using the collaborative platform for sharing knowledge