

EU Integrated Project

*Modularisation and standardisation -
the key to introduce rail system
innovations*

**MODLINK Midterm Conference
Berlin, 14th February 2006
Ake Wennberg**

- ❑ **6th Framework Programme => Rail sector attracted 1/3 of Sustainable Surface Transport budget, i.e approx. €160m!**
- ❑ **MODTRAIN was one of the first major 6th Framework Integrated Projects in Rail**
- ❑ **Needs to demonstrate tangible results in terms of interfaces and joint solutions to the problems of High Speed Interoperability**
- ❑ **Supported by many of the major actors in the Rail sector in the field of Manufacture, Operations, Sub-Assembly supply and Academia**

MODTRAIN Core Group	Subsystem Suppliers	Research Centres	Professional Associations
<p><i>Intern. Associations</i></p> <ul style="list-style-type: none"> • UNIFE (Coordinator); Management support: ALMA • UIC <p><i>System Integrators</i></p> <ul style="list-style-type: none"> • Alstom Transport • AnsaldoBreda • Bombardier Transportation / FAV • Siemens TS <p><i>Railway Operators</i></p> <ul style="list-style-type: none"> • DB AG • SNCF • Trenitalia 	<ul style="list-style-type: none"> • ABB Schweiz • D2S International • D'Appolonia • Deuta Werke • FAR Systems • Frensisemi • IFE • KMT • Knorr-Bremse • Lucchini • Lumikko 	<ul style="list-style-type: none"> • ERCIM • FPC / UPC • Fraunhofer IWM • IAS • IST Lisboa • Politecnico Milano • TU Berlin • TU Wien • Universita di Firenze • University of Newcastle 	<ul style="list-style-type: none"> • ANIE (I) • FIF (F) • RIA (UK) • VDB (D) • TÜV Nord

- **Clear commitment from major Operators to the value of specific Standardization efforts**
- **Definitions by Operators of Requirement Specifications**
- **Strong Industrial leadership of project execution**
- **Clear deliverables/milestones throughout our project executions**
- **Targeted projects were results should be implemented (this is difficult with long lasting projects but should be one of the milestones in the project)**
- **Strong project STECO that continuously (at least every 6 months) support and challenge project execution**

- **Standardization enables**

- Cost reduction due to longer production runs
- Reduce the number of parts
- Easier introduction of low cost suppliers
- Less risks when delivering new vehicles
- Reliability increase
- Re-use of pre-tested sub-assemblies

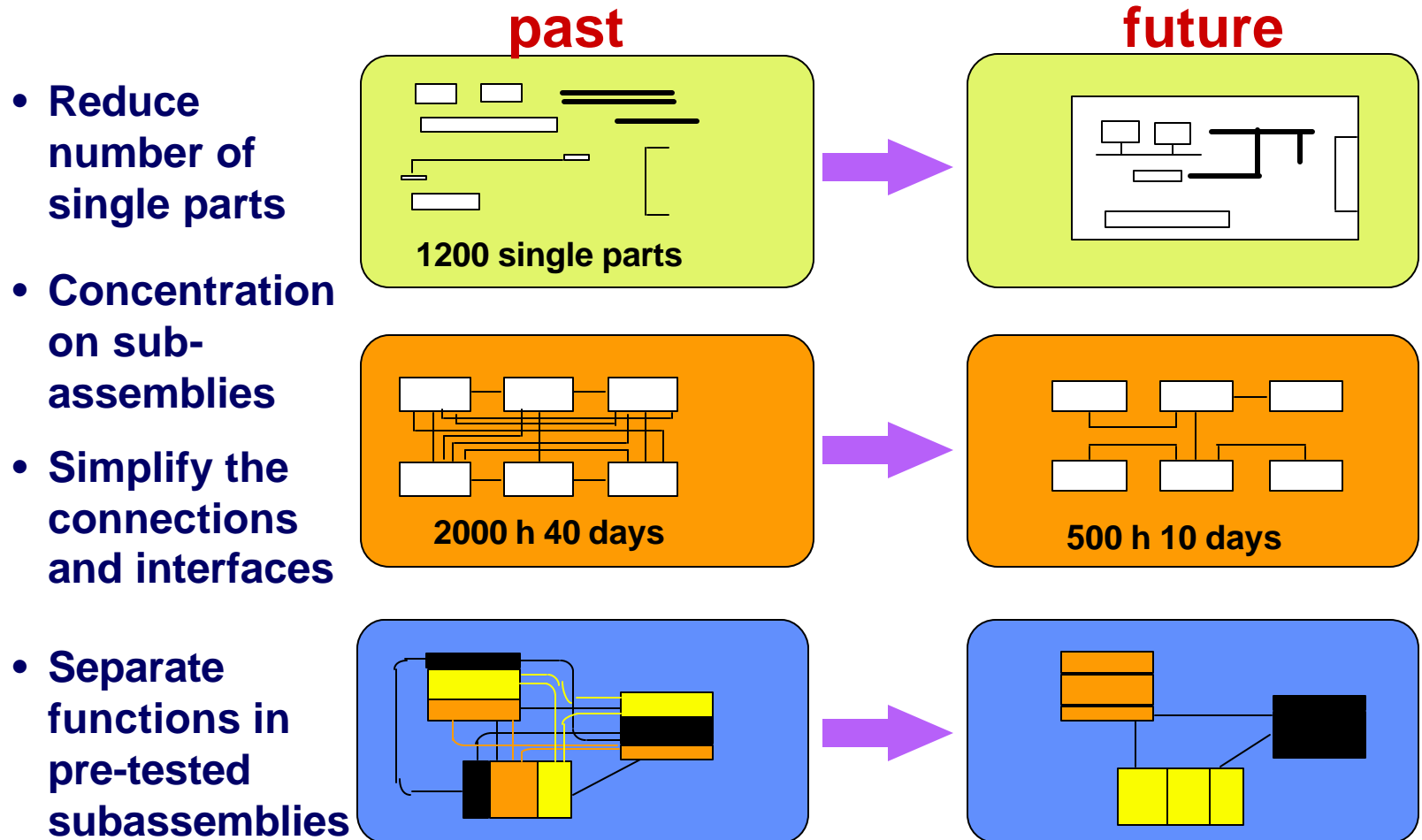


- **Design and verify vehicles against TSI requirements**

- Simplify homologation and qualification in EU
- Qualify sub-suppliers
- Support work of ERA to improve TSI
- Support development of interoperable rolling stock

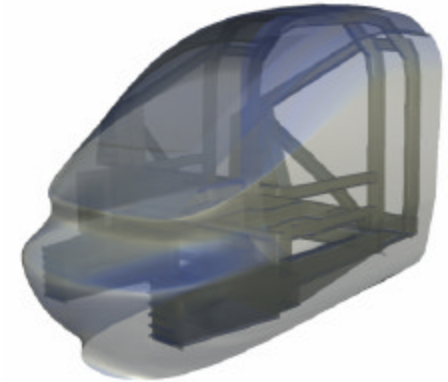


Industry benefits: Reduction of product variety



■ **MODLINK – EU Cab**

- One driver desk with common drive/brake philosophy for all EU-countries
- Same concept for cab crash structure for all vehicles
- Standardized and improved ergonomics and safety of man-machine interface (MMI)
- Standardized and improved crash safety and occupant injury criteria
- Optimized HVAC System defined



■ **ModLink – EU Pax**

- People with reduced mobility (PRM) requirements standardized
- Passenger Train Interface standardized

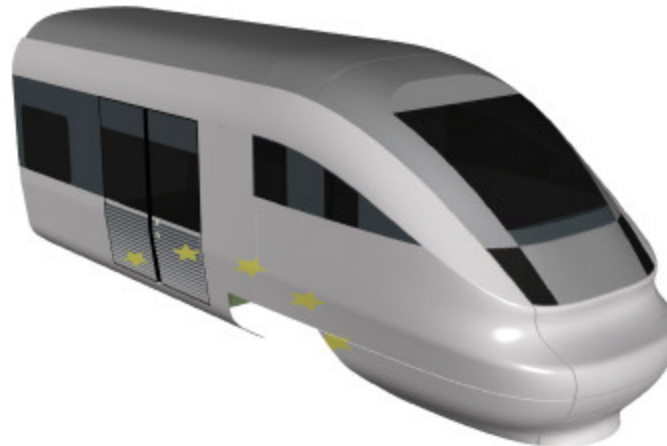


■ **ModLink – EU Coupler**

- Principle interfaces defined



- **MODLINK – EU Cab**
 - Definition of display functionalities
 - Input from ModControl
 - Simulator test (DB/SNCF)
- **ModLink – EU Pax**
 - Mockup to be finished
- **ModLink – EU Coupler**
 - Electrical interface of coupler to be defined



- Industry needs harmonised requirements
- Fulfilling simultaneously hundreds of standard requirements is challenging, but possible through
 - Professional requirements management
 - Excellent team spirit and strong project focus
- EU Cab mock up is the first time realisation of a TSI compatible drivers cabin
- EU Coupler is a big step towards connectivity of different trains
- EU Pax ensures easy travelling cross-boarder for passengers

**ModLink is one step forward towards
a more competitive Rail Transport System**