

I RAIL TECHNOLOGICAL FORUM FOR INTERNATIONALIZATION

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Madrid

TALGO INNOVATION

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PATENTES TALGO

Financed by:



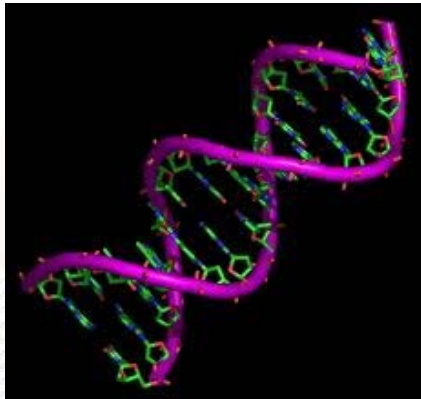
Organized by:



With the collaboration of:



R&D&i in Talgo



POLICY R&D&i

System Innovation Management in accordance with standard UNE 166002:2006 - AENOR 2009

Strategic Lines

Design and develop innovative products that contribute to Talgo, sustained growth over time

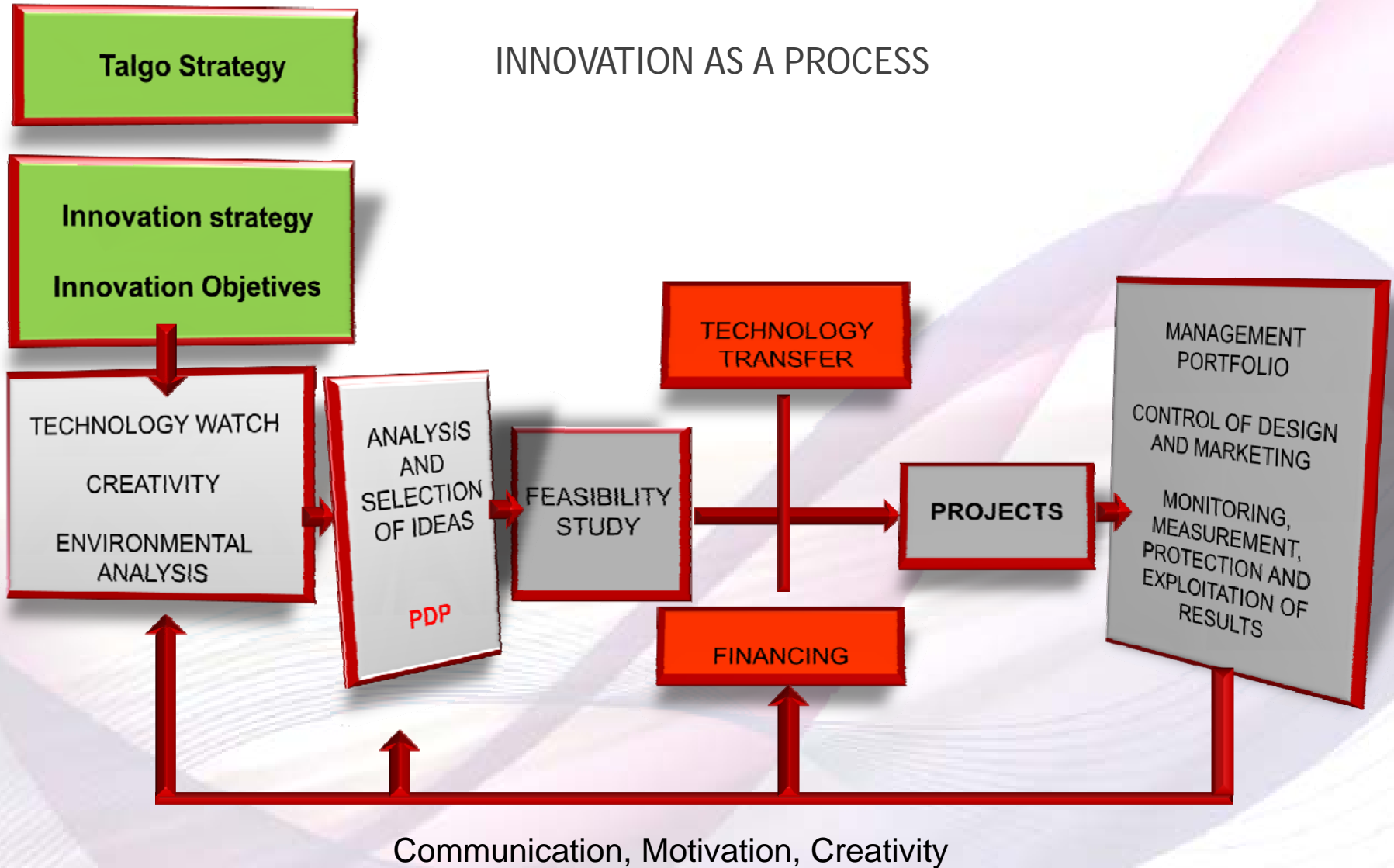
Promoting the policy of protection of the results obtained as a result of their R & D

Promote a culture of innovation within the organization

Strategic alliances with entities of interest to face new challenges that allow them to develop innovative products



INNOVATION AS A PROCESS



Communication, Motivation, Creativity

Why do we need to innovate?

Key Elements for Competitiveness

Research – Development– Innovation

Innovation must respond to changes that occur:

- The macro-economic environment.
- New needs of customers.
- Customer Profiles

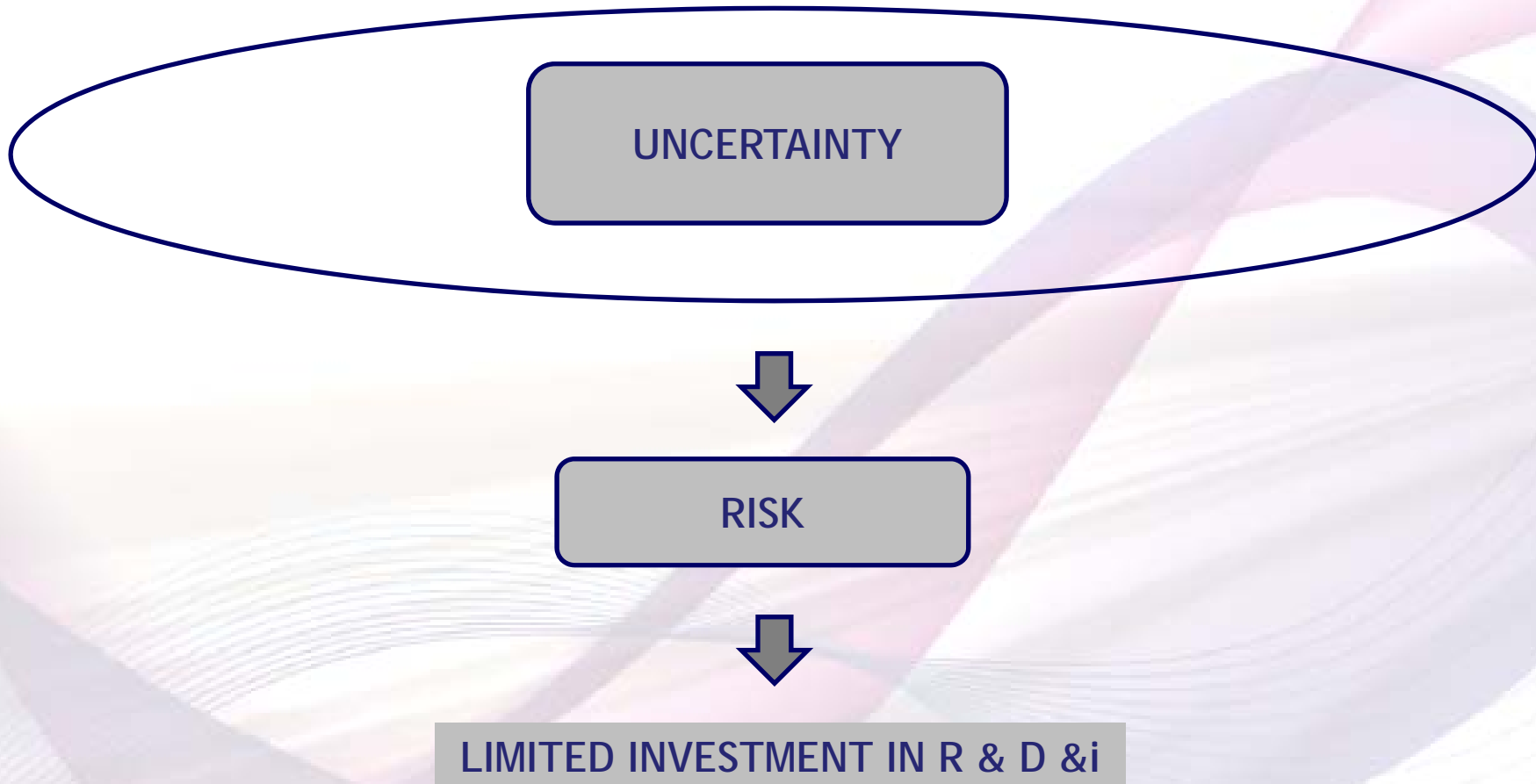


New Technological Challenges



❖ The internationalization of Companies requires the development of new products and the improvement and adaptation of existing products

❖ What characterizes the R + D + i?

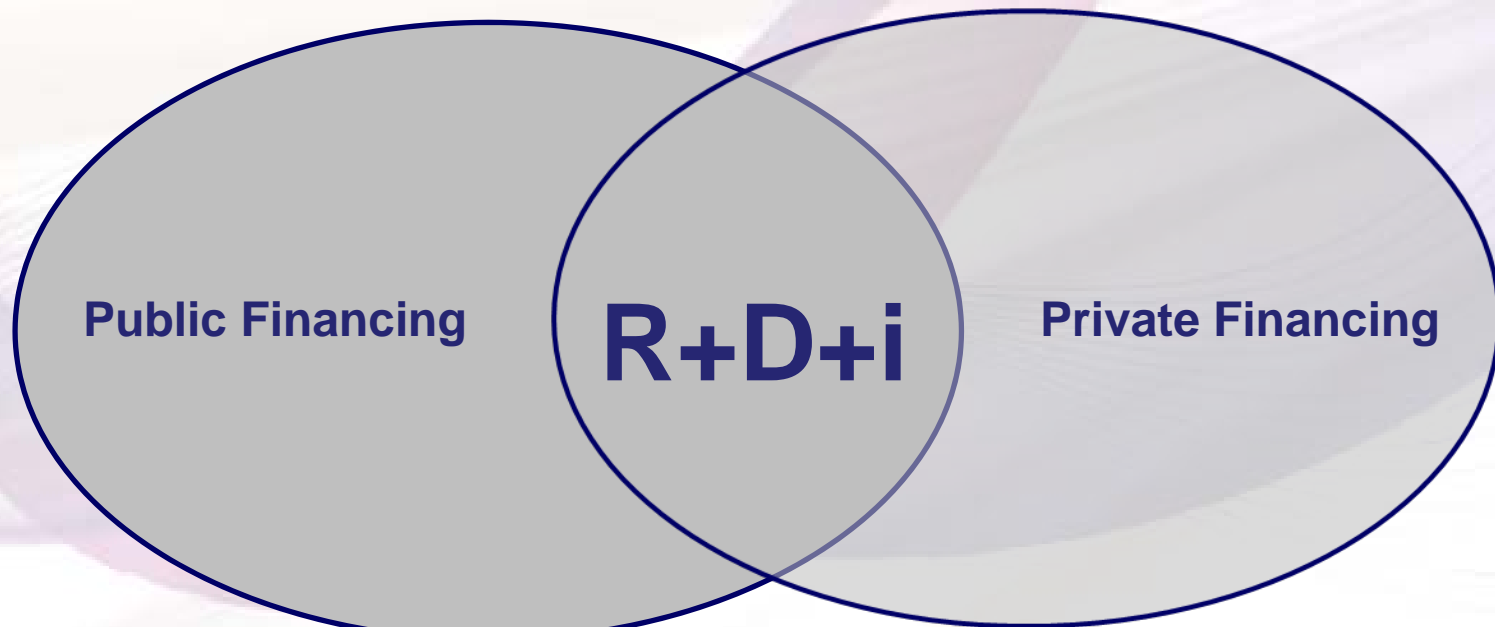


NEEDS FINANCING

Public financing can complement the **private financing**, becoming a **driving force** for innovation in companies:





- Reduces the level of risk in business.
- It is a lever of cultural change in companies
- Increase the level of competitiveness of local companies in international markets

It should be a tool that must be available to all companies, large and small



Tangible results of public-private cooperation

❖ I+D+i Patentes Talgo SL Subsidies 2008 to 2011

YEAR	PROJECT	ORGANIZATION	Financing source %	
			LOAN	SUBSIDY
2008	electronic cards test bench		47%	8%
2008	Freight variable gauge axle development	 Centro para el Desarrollo Tecnológico Industrial	35%	6%
2009	AVRIL		56%	19%
2008	Freight variable gauge axle development		0%	25%
2008	High Speed		75%	0%
2009	Competitvity Plan 2009	 GOBIERNO DE ESPAÑA	70%	0%
2010	Competitvity Plan 2010	MINISTERIO DE INDUSTRIA, TURISMO Y COMERCIO	70%	0%
2011	Competitvity Plan 2011		70%	0%
2010	Safer, more efficient and accesible new train development	 Instituto Madrileño de Desarrollo www.imad.es	0%	25%
2010	Talgo Hybrid		0%	25%
2011	7th Framework Programme	 SEVENTH FRAMEWORK PROGRAMME	0%	50%

❖ CDTI Projects



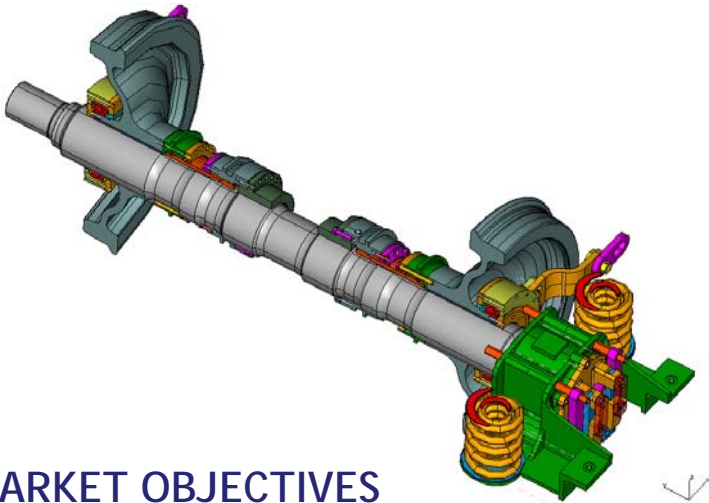
Centro para el Desarrollo Tecnológico Industrial

CDTI PROJECTS FROM 2008	PROJECT	Financing source %	
		LOAN	SUBSIDY
Freight variable gauge axle development	PID	35%	6%
Electronic cards test bench	PID	47%	8%
AVRIL	INTEGRADO	56%	19%

❖ Currently in CDTI are two Individual projects and another project in cooperation with the below mentioned companies:



Individual Project PID.- Freight variable gauge axle development

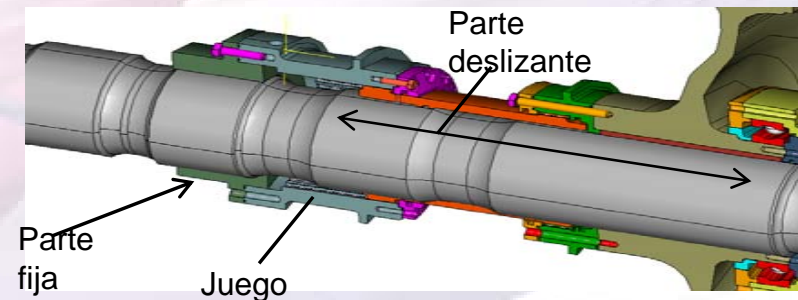


MARKET OBJECTIVES

- Improving safety on freight transportation
- Increasing efficiency of the transportation system
- Development of new technologies in infrastructure and freight rolling stock

TECHNICAL OBJECTIVES

Design of a new freight axle fitted with variable gauge system that can be built on existing bogies or wheelsets



Project in cooperation 2009-2012.- design and development of a new high speed train with a low floor frame and high capacity

OBJECTIVE

Development of a new high speed train (330 km/h), with a energy efficiency unique in its class expressed by a low electrical energy consumption per kilometer and per passenger. It includes a design of a new passenger coach with an unique width that allow 5 seats per row fulfilling EU regulations.



COMPANIES INVOLVED IN THIS PROJECT:



AVRIL

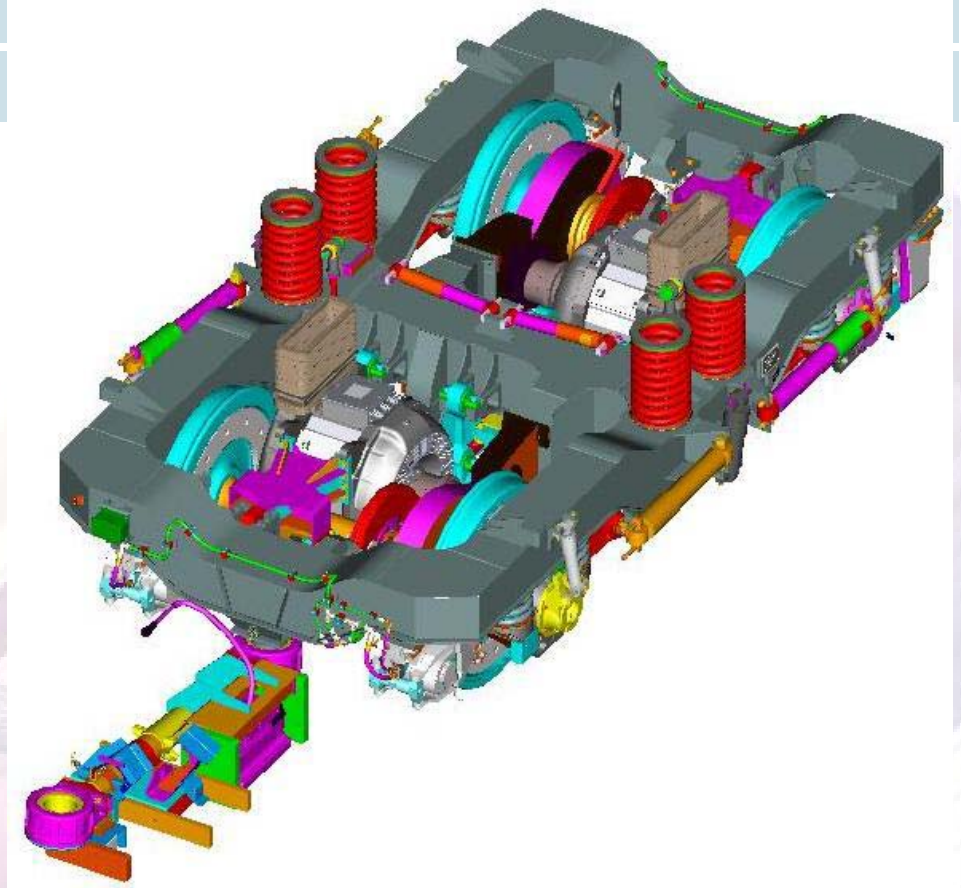
"WIDE BODYFRAME"



MODEL



BOGIE CHASSIS



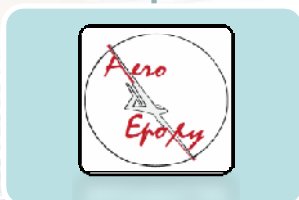
CONSORTIUM MANAGEMENT

Project management, technical leadership and strong relationship with CDTI



Socio	% Presupuesto
	49%
	38%
	5%
	5%
	3%

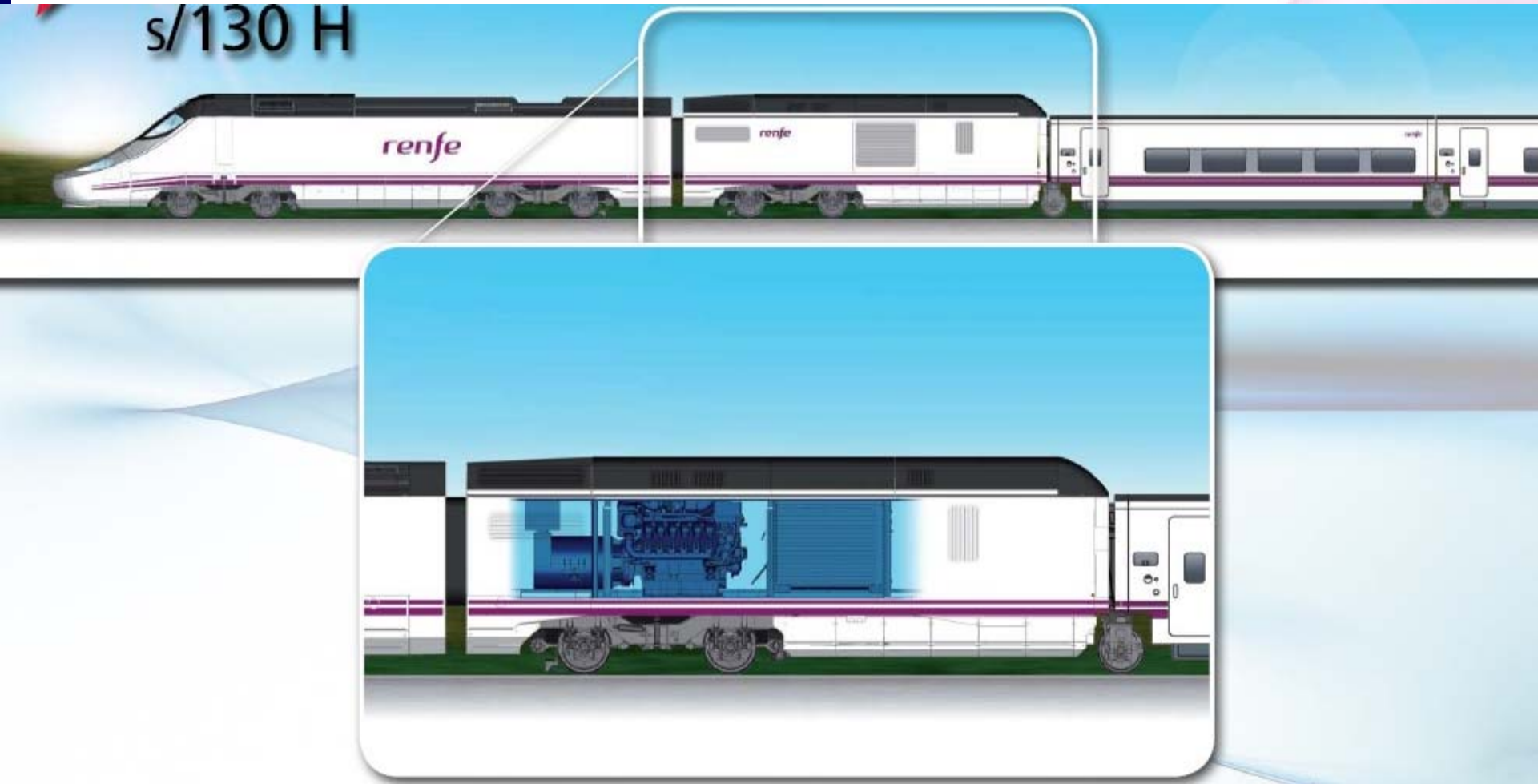
PARTNERS: project management of their parts, on time delivery of their documents to CDTI. Public research institutions management.



PUBLIC RESEARCH INSTITUTIONS



DUAL TRAIN



S/730 características técnicas

Tracción	Eléctrica / Diésel-eléctrica
Ancho de vía	1,668 / 1,435 metros
Cabezas motrices	2
Composición máxima	M + CET +9 R + CET + M
Tensión	25 kV y 50 Hz c.a. , 3 kV c.c. y líneas no electrificadas
Potencia	4.800 kW c.a / 4.000 kW c.c. / 2.400 kW diésel
Motores	8 asíncronos / 2 motores diésel de 1.800 kW + alternador trifásico síncrono con rectificador integrado
Distribución de bogies en cabeza tractora	Bo-Bo
Bogies motores	4
Empate bogie	2,800 metros
Número de ejes motores	8
Ejes remolque	10 rodales Talgo + 2 bogies (4 ejes)
Número máximo de ejes del tren	22
Velocidad máxima	240* km/h (ancho UIC) y 220 km/h (ancho ibérico)
Longitud	185,648 m
Masa en vacío	361 t
Masa en carga	383 t
Señalización	ERTMS ; STM de LZB, ATP Edicab ; Asfa Digital



CONCLUSIONS:

- Talgo innovation is understood as a process, with indicators.
- Innovation is focused on customers.
- It's open innovation, working with OPI's, Operator, Infrastructure Administrator and other companies.
- It is necessary to supplement the self-financing with the public

THANK YOU