INSTITUTO NACIONAL DE TECNICA AEROESPACIAL

(I.N.T.A.)

Innovative Transport Approach in Cities and metropolitan Areas (ITACA)

Kick-off Meeting

Bologna, February 18 –19, 2010


ROBLEDO
Deep Space TrackingStation operated for NASA
INTA TORREJON
• Headquarters
• Laboratories and Facilities
Madrid
VILLAFRANCA
Satellite Tracking Station operated for ESA
CEDEA
• Tracking
• Telemetry
• Launching
• Sounding
• Energy
• Meteorology
MASPALOMAS
Space Station
CENTRES

Missions

Aerospace science and technology development in collaboration with other organizations and industries nationally and internationally.

Advisory and technical assistance to Central and Autonomic Government Organizations as well as to Industry.

Acting as metrology laboratory for the MOD. Integral scientific and technical support to the Armed Forces and public Organizations.

Transfer of scientific-technical knowledge and technology.

Performing tests, analysis, studies and experimental research.

Management and implementation of specific national and sectorial programmes.

Elaboration of R&D proposals for definition of national R&T programmes.

Specialized training of scientists and technicians.

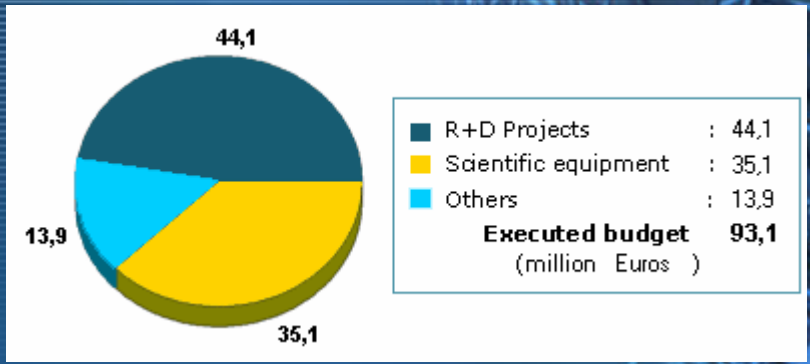
Research and Development

- Aircraft
- Space Vehicles and Instruments
- Weapons Systems
- Materials
- Aerospace Structures and Mechanisms
- Aerodynamics
- Flight Mechanics
- Optoelectronics and Guidance Systems
- Communication and Navigation Systems
- Antennas
- Remote Sensing
- Metrology
- Energy
- Microgravity

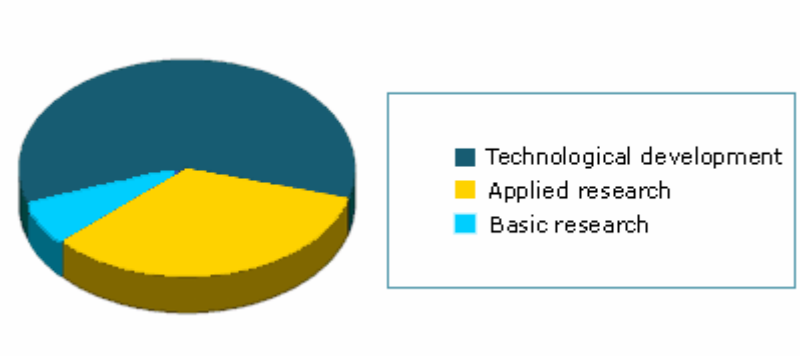
Research & Programmes Directorate

INTA's Figures

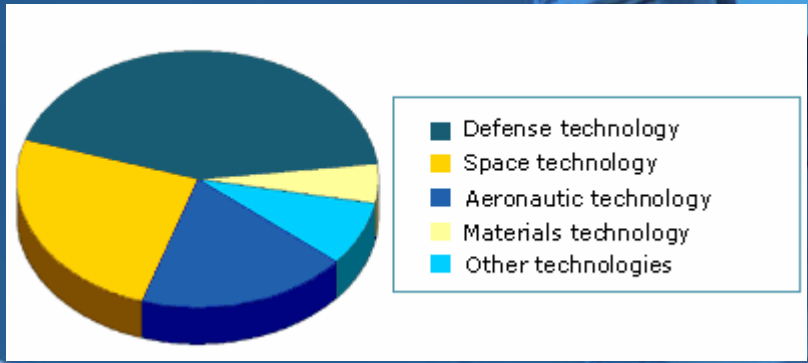
BUDGET (millions Euros)



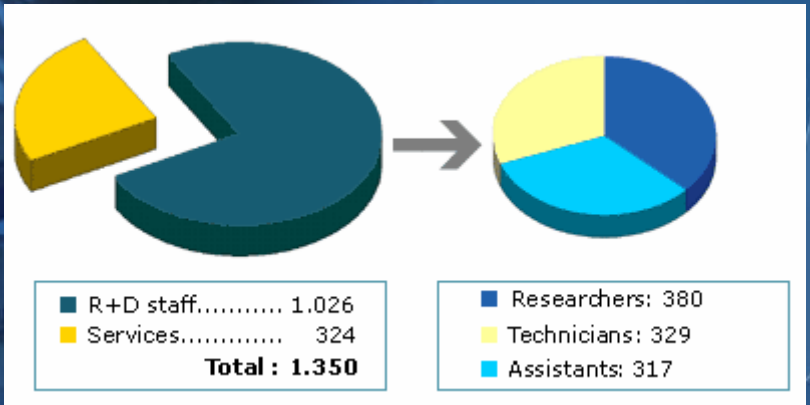
ACTIVITIES



TECHNOLOGIES



STAFF



- Since the early seventies, renewable and alternative energies have been one of the R&D areas in which INTA has dedicated a continuous effort.

- In 1989, INTA started a program focussed on the use of hydrogen as a storage medium for solar electricity in space manned missions.

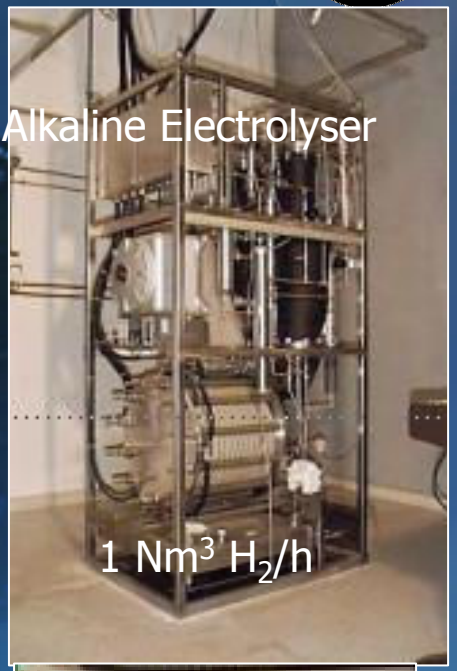
- A facility consisting of an 8.5 kW photovoltaic field and 5.2 kW alkaline electrolyzer was constructed and characterized in Huelva

- Since 1994, hydrogen activities were concentrated on the hydrogen utilization in fuel cells looking for both, a non-centralized electricity generation and a clean fuel for transportation.

Hydrogen and Fuel Cells Programme at INTA

Solar Hydrogen

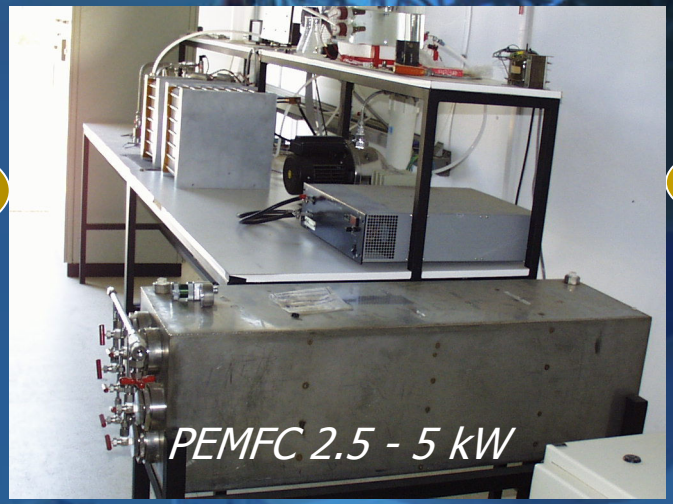
"El Arenosillo" (Huelva)



MINISTERIO DE DEFENSA

Hydrogen and Fuel Cells Programme at INTA


PAFC 10 kW


PEMFC 2.5 - 5 kW

FC Pilot Plants

"El Arenosillo" (Huelva)

FC Components Test Bench

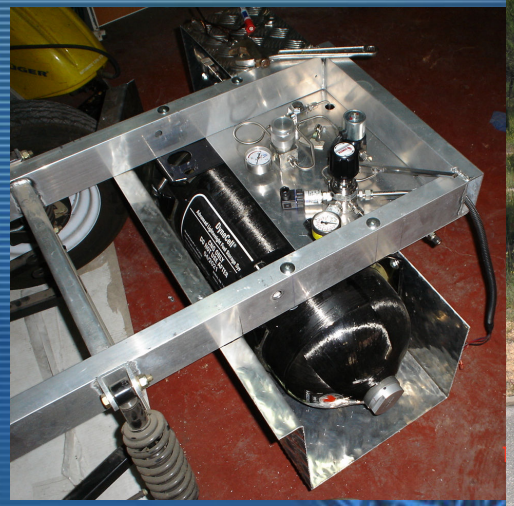
Torrejón de Ardoz (Madrid)

MINISTERIO DE DEFENSA

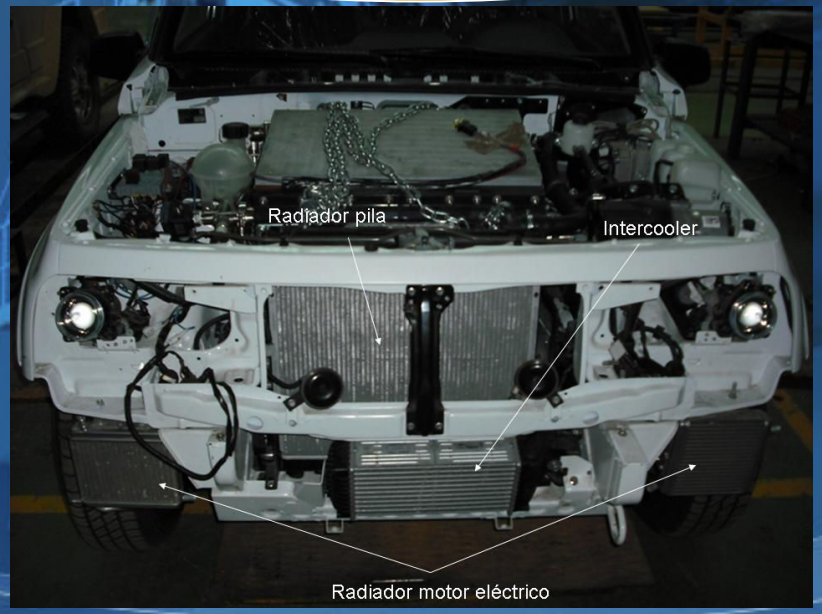
12 kW PEMFC Test Bench

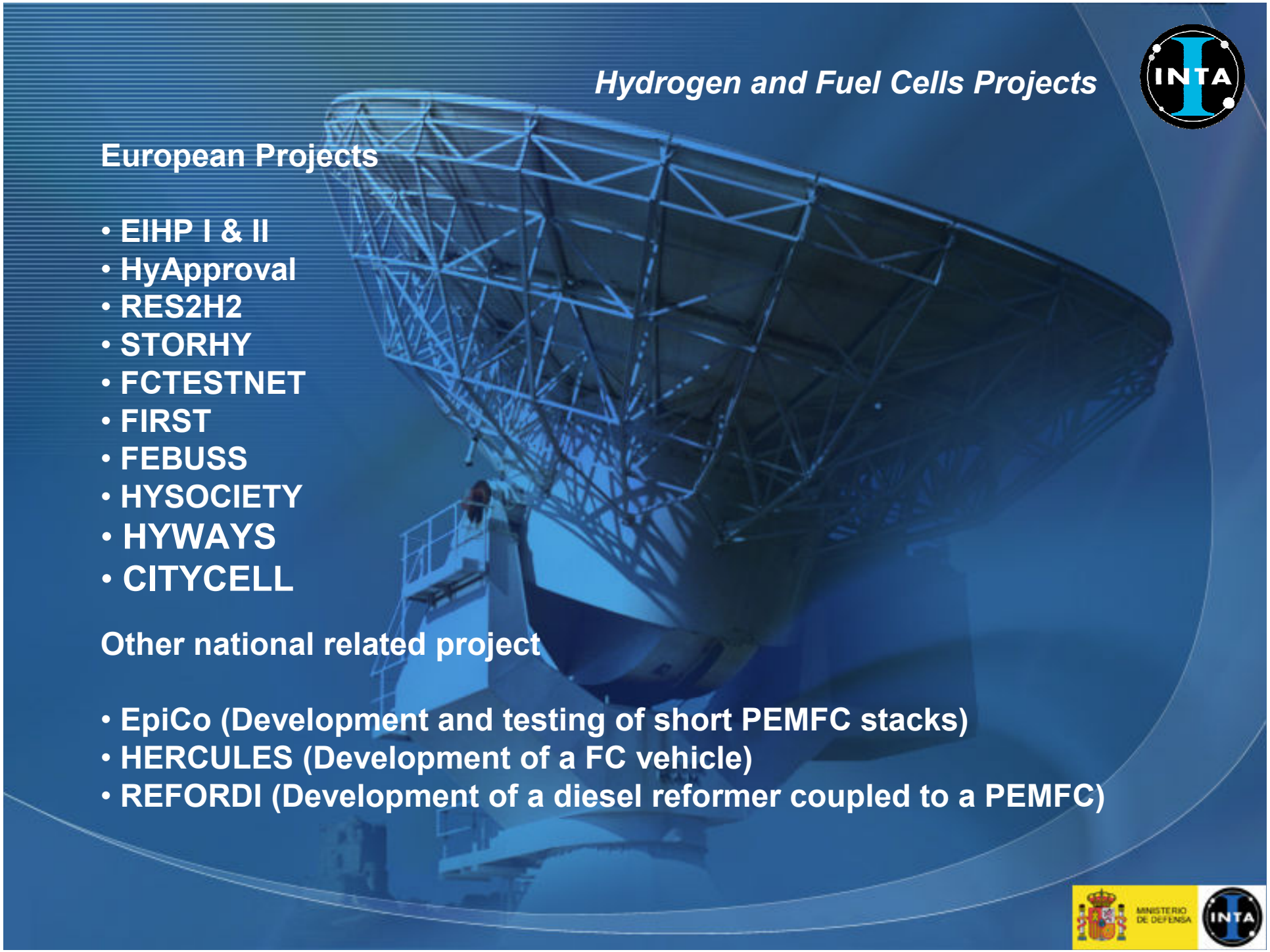
4 kW PEMFC Test Bench

"El Arenosillo" (Huelva)



Fuel cell electric vehicles





Hydrogen and Fuel Cells Projects

European Projects

- EIHP I & II
- HyApproval
- RES2H2
- STORHY
- FCTESTNET
- FIRST
- FEBUSS
- HYSOCIETY
- HYWAYS
- CITYCELL

Other national related project

- EpiCo (Development and testing of short PEMFC stacks)
- HERCULES (Development of a FC vehicle)
- REFORDI (Development of a diesel reformer coupled to a PEMFC)

Car Testing and Certification Centre at INTA

MINISTERIO DE DEFENSA

EIHP: European Integrated Hydrogen Project

Objectives: Initiate and provide inputs for regulations on an EU and global level for the approval of hydrogen fuelled road vehicles, hydrogen refueling infrastructure and the relevant interfaces

Partners: Vandenborre Technologies, BMW, DC, Ford, FZK, LBST, Messer, Opel, INTA, Air Liquide SA,Commissariat à l'Énergie Atomique, Air Products, BP, Shell, NCSRDemokritos, EC-Joint Research Centre, Det Norske Veritas, Norsk Hydro ASA, Raufoss ASA, Volvo, HEW, Renault


Thank you for your attention !