# Intecs SpA for ESO Projects


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# The Company

- ***INTECS*, funded in 1974, is an Italian private Company at the forefront in the design and implementation of ICT systems for the Defense, Space, Telecommunication and Transport markets.**

- ***INTECS* operates designing and developing applications, systems, SW tools and HW/SW components for complex electronic systems in cooperation with the major European and Italian Organizations, Universities and Research Centers.**

- ***INTECS* since its foundation, has been operating in the software market, where safety, reliability, innovation and quality are the key ingredients for success. Recently *INTECS has acquired Technolabs Company adding Telecommunication Systems and HW design to its traditional capabilities***

- ***INTECS's* personnel is today composed of more than 700 employees mostly with a degree in engineering and computer science.**

- ***INTECS's* facilities are located in Rome (HQ), Aquila, Milan, Turin, Naples, Pisa, Cagliari, Toulouse, Paris**

# Competencies

## INTECS core competencies include:

- Dependable and safety-critical systems
- Software Defined Radio
- Operating System, middleware and communication software
- Earth Observation systems and Geographical Information Systems
- Software Verification and Validation
- Software Engineering and Software Quality
- Human Computer Interfaces
- Supervision and Command & Control systems

In 1994 Intecs became one of the first software companies in Italy to be awarded the UNI ENISO-9001 certification,
which was renewed in 2005 under the name of UNI EN ISO-9001:2000. In April 2009, the company achieved
CMMI® (Capability Maturity Model Integration®) Level 3 awarded by Software Engineering Institute (SEI) for DEFENCE and ATC/VTS

# Technologies and Skills

## INTECS Main Technologies and Skills

- Embedded Real Time System
  - Applications
  - Operative Systems
- System & Software Engineering
- Verification & Validation
  - Safety-Critical Systems
  - Check-out systems
- Geographical information System & Remote Sensing
- Internet & Communications
  - Data dissemination
  - Mobile terminals
- Satellite navigation applications and user terminals

# Specific Space capabilities

**On board**

- On board Communication (1553, Spacewire)
- On Board Devices drivers-Boot & Download , O.S. & drivers (BSP)
- Central Data Management
- Control sub-systems-Solid State Mass Memories
- Experiments control (ISS)
- Payloads handling/data acquisition
- Mission& System Design
- Payload& Equipment Design Based on SDR approach (Navigation, TT&C, Radar)

**On Ground**

- Electronic Ground Support Equipment subsystems (EGSE)
- Data evaluation /dissemination of payload data (WEB portal)
- Space Systems AIT/AIV & Launch support
- User Services and Spatial Data Infrastructures
- Data warehouse for mission support
- Data Dissemination Services
- OGC compliant GIS services and Clients
- Telecomunication & Navigation Application & User Terminal

# Elettro/Optical technologies

## Fiber Optic bus for very speed bus and comunications

- Intecs/Technolabs has a capability in design and testing optical bus up to 10 Gbits, suitable for on board applications
- Unit implementation for avionic system in progress

## Analog Fiber Optic Link for Radar, Comm. and EW systems

### Applications

- Optical Beam Forming Network (OBFN) and signal distribution in Phased Array Antennas (PAAs)
- Antennas remoting
- RF, MW an MM Frequency generation
- Frequency Waveform Generation
- Signal Filtering
- Real-time spectrum analysis

### Characteristics

- Wide instantaneous and operating bandwidth (> 40 GHz)
- Low loss transmission medium (0.1 dB/Km @1550 nm)
- No frequency dispersion of optical carrier modulated signals
- Low weight and size cables reduction
- Immunity to EMI, EMP and RFI

# Intecs/Technolabs Technology Capabilities

the Brainware company

## Hardware Design

- Detailed Design Specification ( Systems / Cards)
- Simulation, Implementation and Test
- Reliability estimation and Thermal Analysis
- Support to HW / SW integration

## ASIC&FPGA Design

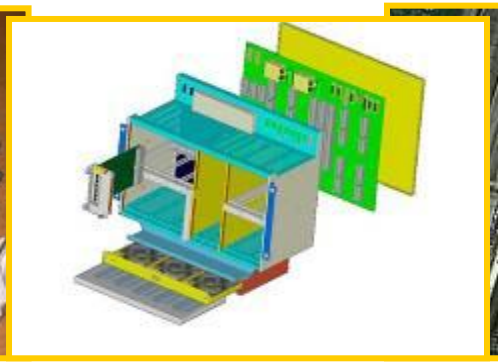
- Device design specification
- Synthesis and simulation
- Silicon Foundries interfacing
- Post layout and timing verification
- Device test definition and execution

## Software Design

- Detailed level Specs
- Specification languages & Programming languages
- Real- time embedded software (VxWorks, Linux, PSOS)
- Protocols (e.g. TCP/IP, stack ISO/OSI, IEEE 802.3)
- Web Interfaces (Java, AJAX, LabView..)

## Physical Design

- Design and implementation of the mechanical structures
- Signal Integrity design simulation & verification
- Thermal modeling
- EMC & SE (Shielding Effectiveness)

# Intecs/Technolabs Testing Capabilities

## *System Test*

- Network Test
- Test Automation
- Systems validation
- EMC and Safety test

## *TLC Network Services*

- Installation and Commissioning
- Help desk and emergency service (24h/7days)
- Fault diagnosis, monitoring and report
- Local and remote support
- Training & product documentation