

Real-time, multiprocessor, parallel boards

System analysis, signal processing, algorithm development

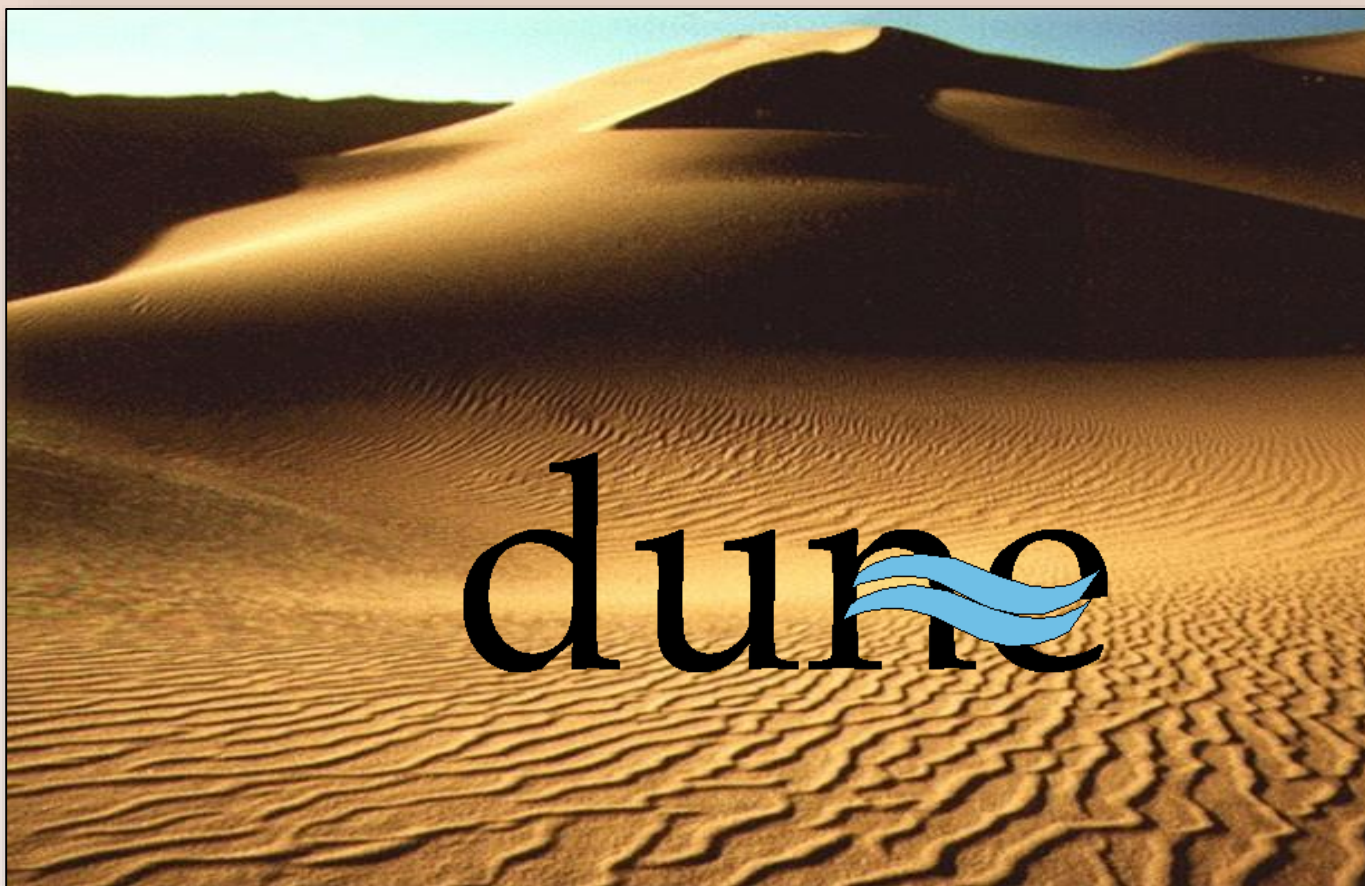
Digital wireless communication

Wideband acquisition and SDR processing board

RF demodulator and processing board

Fast multichannel acquisition and processing

Integrated systems



DUNE is a Small Enterprise operating since 1980 in R&D, aerospace, defence, underwater acoustics, robotics, industrial control and communications.

The company is certified ISO 9001:2008 for SW and HW development and since 2004 has been qualified as Research Laboratory by MIUR (Italian Ministry for University, Education and Research).

Over the last 36 years we have focused our activities in the fields of design, simulation and development of SW processing architectures for hard real-time systems on multi-core and multi-processor platforms (Radar, Sonar and Satellite Systems, Robotic and Industrial Control Systems, Inertial Navigation Systems), management of EU Research Projects (Wireless networks, GSM, UMTS, LTE, LTE-A, femtocells, picocells, broadband communication networks), design and development of dedicated HW solutions for real-time purposes.

Application-ready or dedicated solutions based on a consolidated experience are provided as well as the capability to seek innovative solutions in system analysis.

Flexible processing architectures are exploited to prevent or mitigate the risks related to the obsolescence providing the Customers with systems, easy to be migrated on innovative platforms, which minimize program risks, reduce migration costs and accelerate time to deployment and time-to-market.

The company skill in leading and managing International Research Projects ensures a solid support to the Customers regarding proposal of innovative ideas, international partner contacts, proposal presentation and project management.

The expertise in developing high-performances HW solutions may answer to specific Customers needs not completely met by commercial products.

Acquisition and Processing Systems

- System analysis and requisite definition (performances, timings, computational weights, assessment of system limits and constraints, system behavioural simulations)
- Platform selection support (evaluation, benchmarks)
- Strategies to prevent and mitigate system obsolescence and manage high or not uniform throughputs, run-time errors and failures (flexible multiprocessor architectures, automatic re-configuration strategies, redundancy for fault management, algorithm parameterization)
- Real-time architecture design and development (processor scheduling and affinity management, inter-processor communications, inter-processor communication frameworks, dynamic circular buffering)
- Algorithm definition, optimization, simulation and developing (partitioning, parametric serialization and parallelization, caching and processing optimization, performance assessment)

HW Solutions

- HW solutions for real-time acquisition/processing purposes on Customer specifications (low-noise and high-gain analog front-ends up to 4 GHz, wideband demodulators, hard real-time data acquisition and processing boards, mechanical infrastructures with special design)
- IMU-based systems (localization and navigation systems, IMU boards)

The company follows the entire project life-cycle (architecture design, requisite and specification definition, timing evaluation, simulation and optimization activities, revision of critical points and project changes, testing and integration in the final environment) and provides the entire SW and HW documentation (requirements, specifications, software, test and manual documents) in agreement with the Standard UNI ISO 9001:2008 and the NATO Standard AQAP-150.



Real-time, multiprocessor, parallel boards: DUNE is active in architectural design, development, integration, testing

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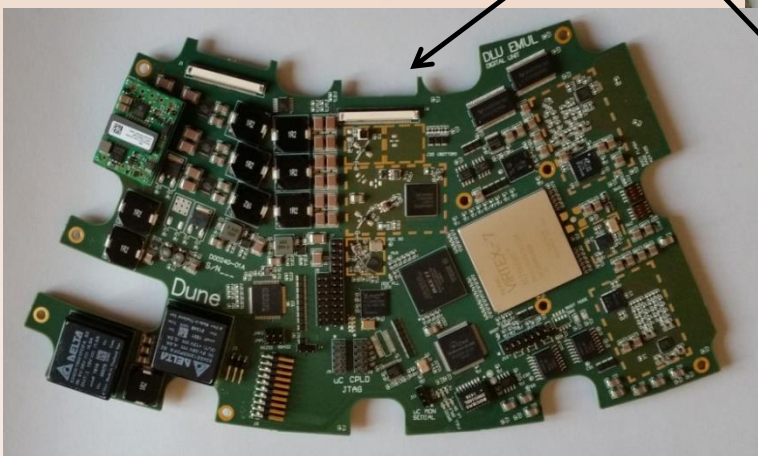
Radar and Sonar, Emulators, Acquisition and processing, Navigation and tracking, Industrial control, Wireless communication, Image processing



RF Demodulator
400 MHz – 5 GHz
Large Band I/Q
conversion in
base band

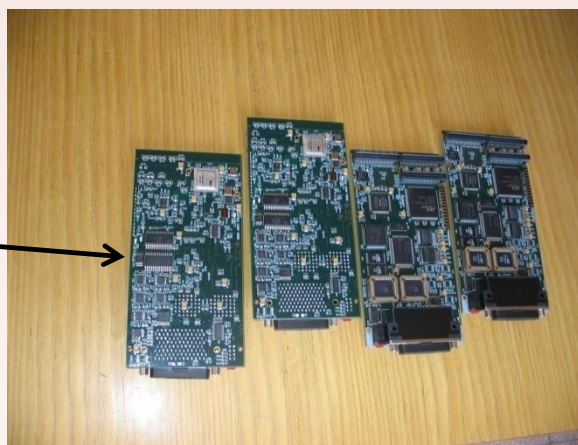


All-purpose FPGA VIRTEX 5, 6 and 7 Platforms
and a Freescale communication processor



ASU2:
Antenna Substitution Unit
for EFA Eurofighter Typhoon

Management of RF signals:
6 -18 GHz with proprietary
boards



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ARIANNA

Standard
Configuration

ARIANNA
MMI

DUNE

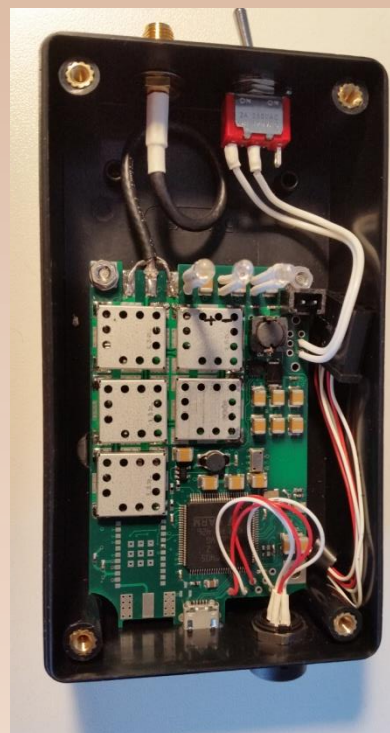
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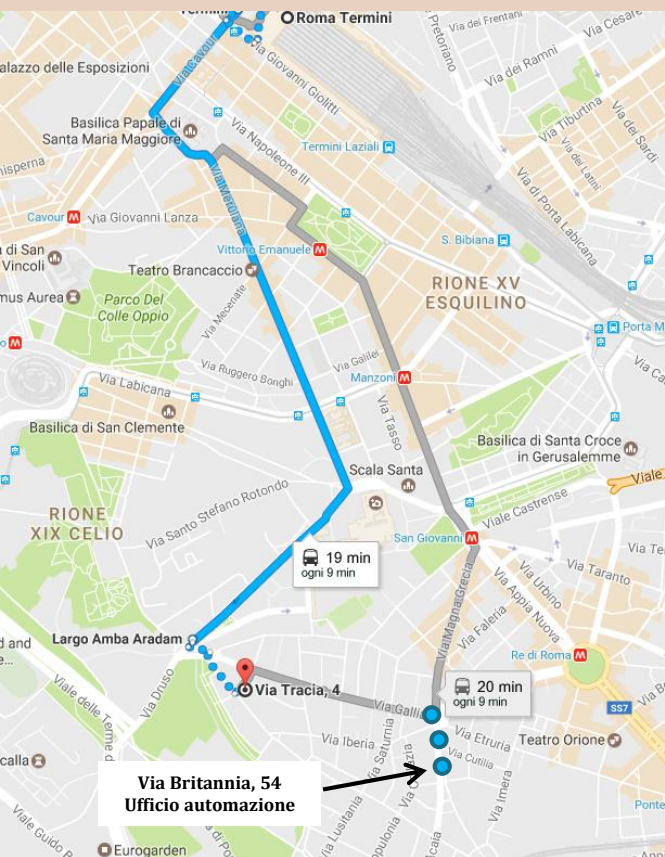
ARIANNA is a special
product for indoor
localization of pedestrians

It is a system designed
for first responders
such as Police, Civil
Protection and
Firefighters and more
generally where the
knowledge of an
operator location is an
important element to
determine security
and success of the
operations.



The system includes an Inertial Sensing
Unit to be attached inside or outside a
shoe heel, a Computing Unit processing
raw data and a MMI SW used to
acquire, integrate and display the path
walked by the operators wearing the
system.

How you can reach us
from Termini station



Ministero dell'Istruzione
dell'Università e Ricerca

ISO 9001
BUREAU VERITAS
Certification



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