



nurjanatech.com



Nurjana Technologies (NT) is a small company providing Systems and Software Solutions for System Integration and Sensor Data Fusion & Tracking based on a strong System Engineering approach to complex system design

Nurjana was established in 2012 on the initiative of the founding partners who have more than 16 years of experience in the fields of defense and aerospace technologies





Who we are

Facilities

NT is located in a 1,500 sq m building in Cagliari, Sardinia (Italy), in one of the most beautiful places in the Mediterranean sea

- Headquarter – Elmas (Ca) - Italy
- Technical Premises and Lab – Elmas (Ca)





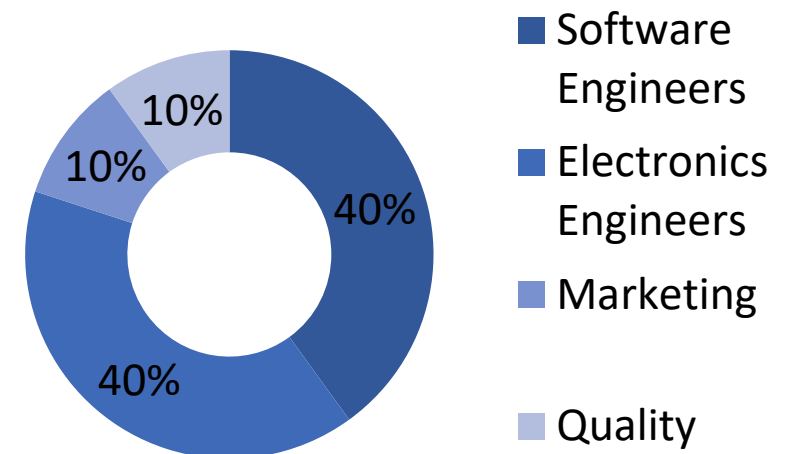
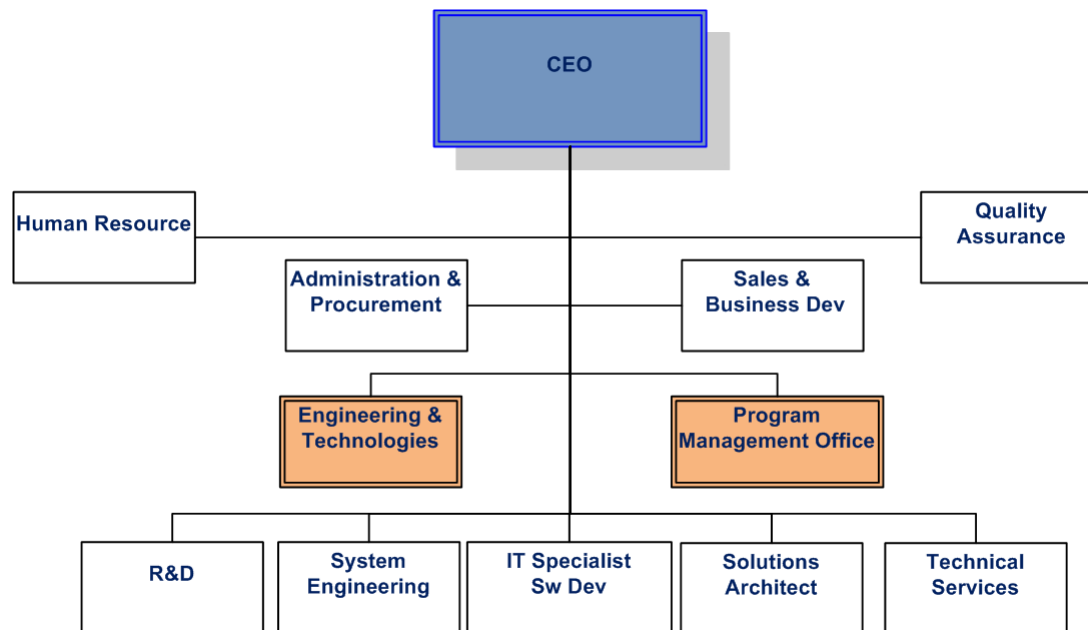
Who we are

Staff and Organization

Nurjana is an engineering-centric company

Nurjana was established in 2012 and has grown to over 20 employees, with a strong and diverse engineering team

Employee





- ✓ Command and Control Systems for Test Centre
- ✓ Tracking Systems and Sensors Integration
- ✓ Project Management and Site Management



- ✓ Payload Data Ground Segment Engineering
- ✓ Technical Support to Integration and Operations
- ✓ Remote Sensing Data Exploitation



- ✓ Application for Real Time Expert Systems
- ✓ Intelligent Surveillance and Target Identification
- ✓ Application for Finite Element Analysis and Modeling
- ✓ Analysis and Optimization Tools



Who we are

Institutional Partnership & Qualifications



Nurjana is member of DASS, Sardinia Aerospace District. With DASS Nurjana develops technology for simulation, experimentation and training in cooperation with other national aerospace clusters as well as technologies and dual-use applications for space-civil-defense



Nurjana is member of the Italian Industries Federation for Aerospace, Defence and Security



Our collaboration with University of Cagliari – DIEE (Department of Electrical & Electronic Engineering), is to address fundamental issues for the development of future pattern recognition systems in the context of data fusion, remote sensing and information security.

Nurjana is member of the International Test and Evaluation Association (ITEA)



Nurjana has a quality management system according to the UNE – EN ISO 9001:2008 Standard for the activities:

«Design, Development and Integration of Hardware and Software Systems; provision of assistance and maintenance services»





Knowledge services and methodologies

- Systems and Software Engineering compliant with ISO 29148-2011, ISO 16085-2006, ISO 26702-2007 and Model Based System Engineering
- Software Design and Development with strong competences in Real Time systems compliant with IEEE 12207-based process for real-time systems using multi-tasking OS
- Operational Documentation compliant with military standards (e.g. MIL-STD-498)

Application fields

- System of Systems Engineering & Design
- Command&Control Systems for Test&Evaluation
- Real time mission critical processing systems
- Front End Processing Equipment
- Payload Data Ground Segment Chain
- Tracks Management
- Tactical Data Link
- Pattern Recognition and Applications
- Adaptive Expert Systems





Understanding the physics behind remote sensing technologies, such as optics, radar and telemetry, for integration into real time expert systems for decision support. In our vision, the output of a data fusion system is aimed at supporting a human decision process.

Sensor and Data Fusion Open Issues

- What algorithms or techniques are appropriate and optimal for a particular application?
- What architecture should be used (i.e., where in the processing flow should data be fused (viz. at the data, feature, or decision levels)?)
- How should individual sensor data be processed to extract the maximum amount of information?
- What accuracy can realistically be achieved by a data fusion process?
- How can the fusion process be optimized in a dynamic sense?
- How does the data collection environment (i.e., signal propagation, target characteristics, etc.) affect the processing?
- Under what conditions does multi-sensor data fusion improve system operation (under what conditions does it impede or degrade performance)?





Regarding Human Behaviour, for specific SW libraries, Nurjana Technologies works with TNO (Organisation for Applied Scientific Research). Below a list of patents and a track record,

Human Behaviour detection.

- EP2410467, EP20100170682, WO2012011817: Identification of persons in the image. Topic: characterising persons based on appearance and matching between their occurrences in different images.
- P99440PC00 Detection of human actions from video data. Topic: spatio-temporal saliency of motion. Some motion patterns in the video are more characteristic of particular human actions than other patterns.
- P100091PC00 Image pattern recognition system and method. Topic: soft-assignment random forest. It classifies samples into target vs. non-target class. In our case, we use it for recognition of human actions in video streams..
- P99622EP00 Video access system and method based on action type detection. Topic: specification of behaviour by rules. Some human actions can be described by humans in terms of rules. TNO has designed such a rule-based system, which is capable of recognizing human actions when they occur in a video stream.





Who we are

Customers, Partners and End Users



We provide systems and technologies for the main players in Defence and Aerospace business.



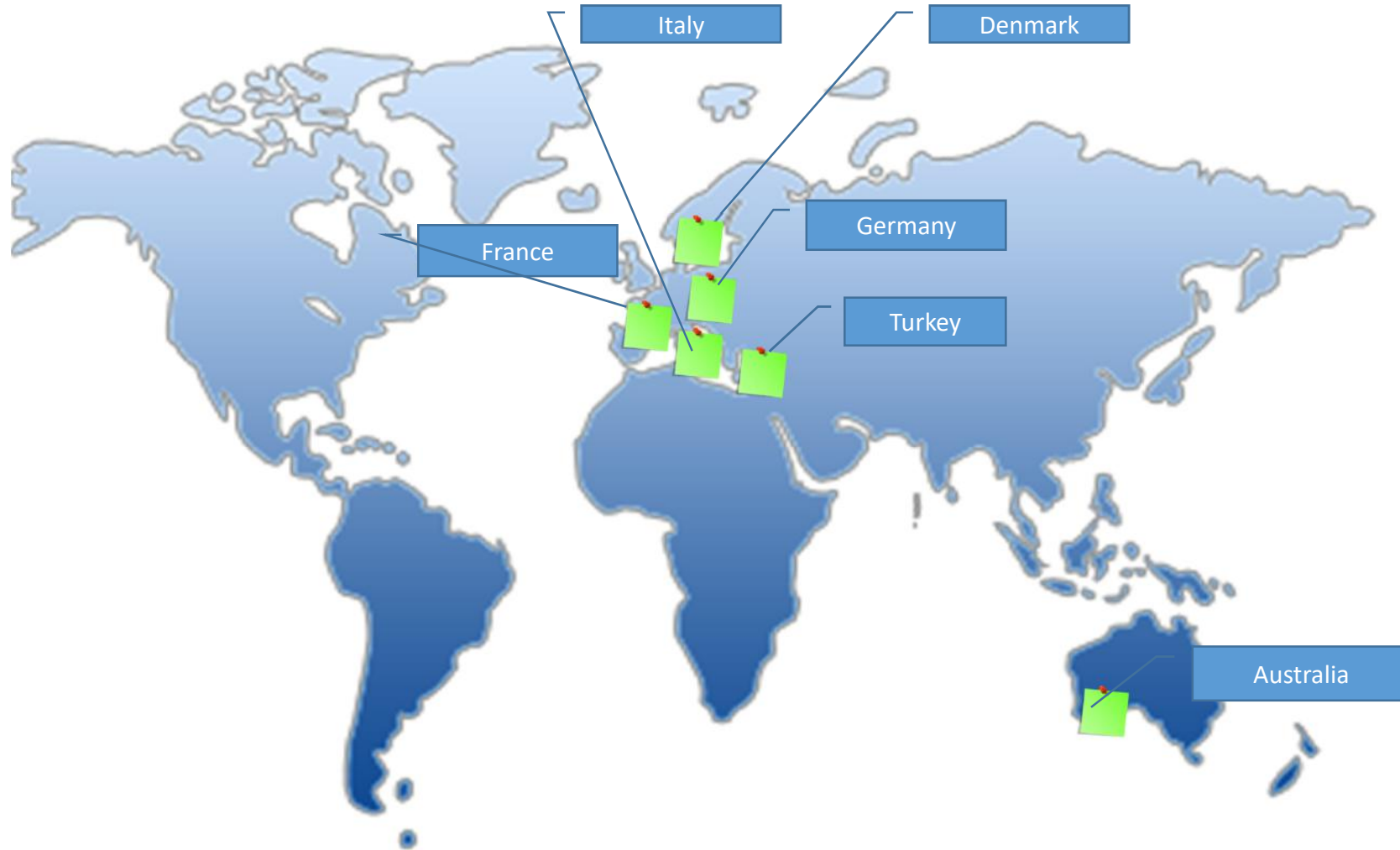
Our team members have an extensive background and experience across Italian Test Range and European Space Agency Missions





Who we are

Where we are working





What we offer

Systems Engineering, Design and Integration

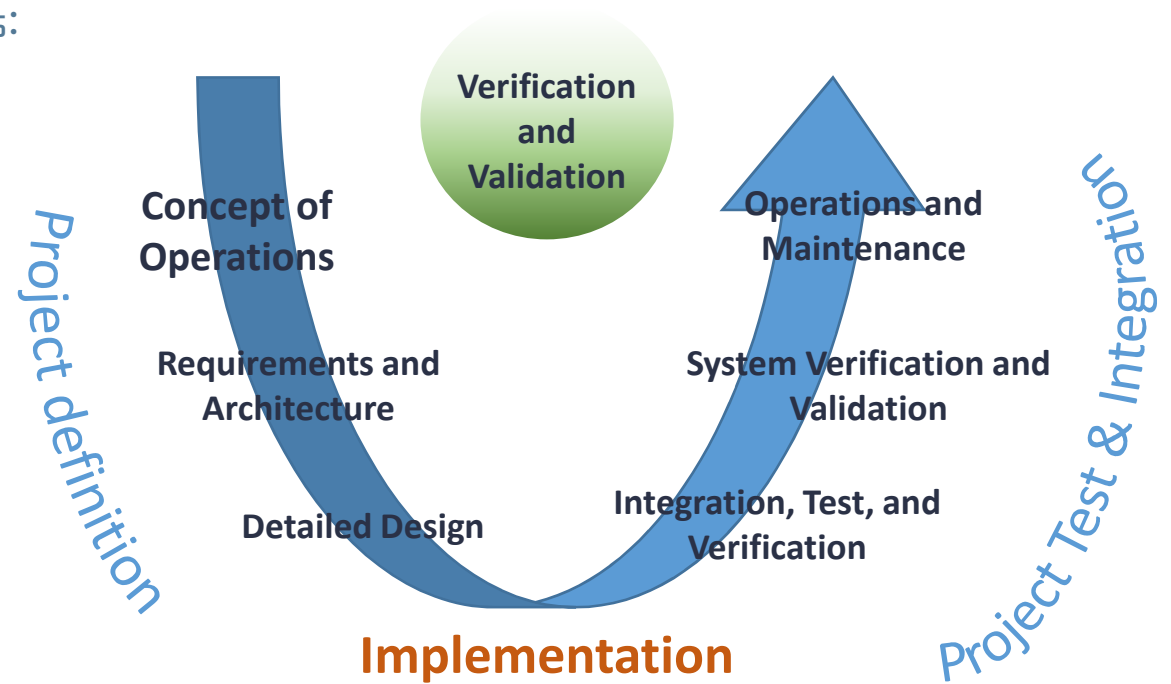


NT offers systems engineering expertise in designing, building and deploying customized solutions that integrate multi-vendor cots solutions enhanced by custom software and hardware/sensors architecture engineering

Systems analysis and design processes based on the operations concepts and latest systems engineering methodologies

Our Systems Engineering Process involves:

- Requirements Analysis
- System Architecture and Design
- Identifying COTS products and accessories
- Developing custom system software
- System and software integration
- Test and deployment
- Training and support



Integration in complex architectures

- Focus on complex architectures for test range. Integration of systems driven by both operations concept and performance.
- Integration of new systems in existent architectures through multiprotocol front-end systems.
- Support to the definition of the System of Systems operations procedures, operations hierarchy and roles





What we offer

Software Design and Development

NT offers complete turnkey solutions for software systems development

- Our skills & expertise span from low level software/firmware to real time and mission critical applications under different OS and RTOS environments.
- Management of multiple vendor solutions
- Integration of algorithms and APIs into the software solution
- Integration of multi-layer/tier applications (drivers, middleware, User interface application)

Software Suite

- C++ and/or boost exceptions
- Qt and/or MFC/Win
- Embedded systems
- CppUnit or other unit test framework
- Multi-threaded real-time systems
- Labview





Nurjana is highly experienced in design and development of Test Centre

Nurjana team include people with expertise in:

- Test Range Program and Contract Management
- Test Range System Design
- Design & Development of Test Range Mission Management
- Test Range Systems and Sensors Integration
- Systems for Range Command and Control, Simulation and Integration





Multi Sensor Central Control Station (MSCCS)

The Multi Sensor Central Control System (MSCCS) proposed by Nurjana Technologies is an integrated and modular Command & Control System based on the Nurjana Technologies software suite - Mission Management Platform (MMP) - designed to provide a complete suite of applications for a wide spectrum of testing and evaluation activities in a test centre



Mission Management Platform (MPP)

The NT Mission Management Platform (MMP) is a complete suite providing all the software packages for managing, configuring and launching missions. The NT MMP is a framework that can be installed in a modular multi sensor control system configuration (MSCCS), without limitations regarding the number of Controller Working Position (CWP)

