Sardinia: from smart cities to a smarter island

Luigi Filippini, President CRS4
CRS4, Center for Advanced Studies, Research and Development in Sardinia, is an interdisciplinary research center that promotes the study, development and application of innovative solutions to issues in natural, industrial and social environments.

These developments and solutions are based on Computational Science, Information Technology and High-Performance Computing.

The main goal is innovation through e-science
CRS4 was founded by the Sardinia Autonomous Region in 1990, initially headed by the Nobel Prize in physics Carlo Rubbia currently has a staff of about 150-200 researchers.

The aim of the Centre is to study, develop and apply innovative solutions using highly specialized skills and knowledge. On this basis, the CRS4 cooperates with academic, scientific and industrial entities, participating in relevant national and international projects.

CRS4 is located at the Science and Technology Park of Sardinia in Pula, in the province of Cagliari, Italy.

The Park is a network of advanced infrastructures and services for innovation and the development and industrialization of research. It is located in an area of 160 hectares, immersed in a natural park, at the foot of the mountain massif of the Sulcis.
The activity of the Centre is based on 3 main areas that combine high technology and international vision with support and technology transfer to the local environment:

- **Research and development**
  ICT and computational sciences
  Enabling technologies

- **Infrastructure**
  HPCN: a top level computer centre with important features (hybrid systems, visualization, etc.) and broadband network connectivity
  NextGen Sequencing: major Italian centre, among the first in Europe

- **Support to the local environment**
  Cooperation and integration (universities, municipalities, National Research Council, INAF, SRT, DASS, etc.)
  Higher education, technological transfer to local companies
Recent R&D activity related to smart cities

- **NETFFICIENT**
  Smart grids, energy storage, smart communities, meteo

- **PATH** (Pathology in Automated Traceable Healthcare)
  Smart health, personal medicine, med workflow

- **Cagliari2020**
  Infomobility, urban information grid

- **CagliariPort2020**
  Smart nodes (city, port, airport), logistic tracking

- **Handy Parking**
  Video surveillance, infomobility
From smart cities to a smarter island

- **Regional control room for innovation initiatives**
  Energy, transportation, ICT, aerospace, tourism, etc.

- **Very good network infrastructure (soon becoming exceptionally good)**
  Large regional fiber optic networks and MANs
  By 2020 everyone with >30mbps and 85% >100mbps

- **High skilled people**
  Two universities, many research institutions, ICT eco-system

- **Sardinia population is not very dense**
  Area of 24000 km², population of 1.6 mln, 377 cities
  Population density of 69/km² (London >5000, Rome >2000)