CRS4 - Loc. Piscina Manna, Edificio 1, 09010 Pula (CA), Italy - www.crs4.it
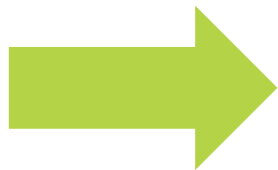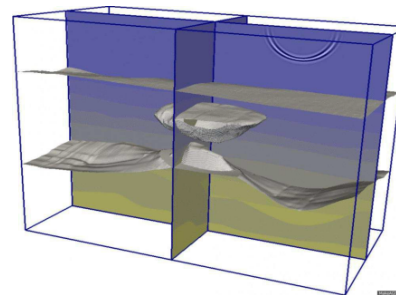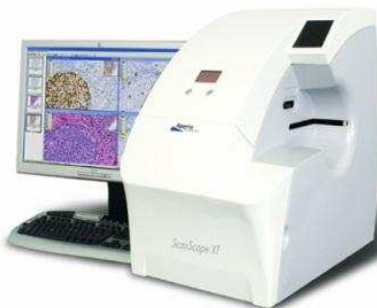
CRS4, Center for Advanced Studies, Research and Development in Sardinia, is an interdisciplinary research center that promotes the study, development and application of innovative solutions to issues in natural, industrial and social environments.

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

The main goal is innovation.

CRS4 is a **multidisciplinary research organization**, operating since 1991, with a staff of about 160 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:
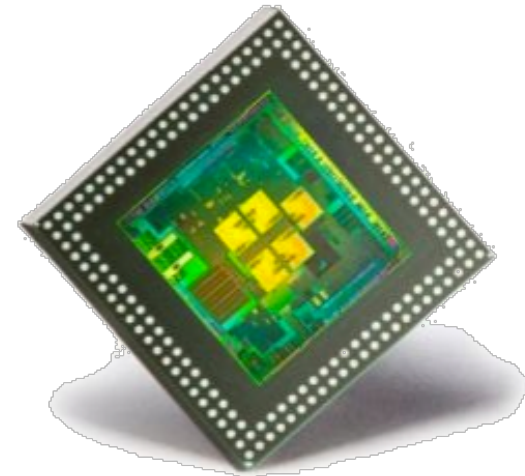
❖ **Research and development**
ICT and computational sciences
Enabling technologies

❖**Infrastructure**
HPC: a top level computer centre with important features (hybrid systems, visualization, etc.)
NextGen Sequencing: major Italian centre, among the first in the world

❖ **Support to the local environment**
Cooperation and integration (universities, National Research Council, INAF, SRT, DASS, etc.)
Higher education, technological transfer to local companies

CRS4 faces **significant and complex problems** also addressed by the broader international scientific and industrial communities, developing **enabling technologies and innovative solutions** through the narrow combination of cognitive and technological research.

In particular, this year the Centre is dealing with:

❖ **Computing and Information and Communication Technologies (ICT)**
   Smart Connected Environments & Platforms (cloud, open/big data technologies, cyber-physical systems, internet of things)

❖ **Biomedicine**
   Development of methods for the management and analysis of biological matrices and their application to environmental issues, biotechnology, clinical or general interest

❖ **Environment and energy**

Prevention, monitoring, planning and optimal management of complex processes such as: exploration of the subsoil, the spread of forest fires, meteorology on a small scale, micro electric intelligent production, clean combustion and fourth-generation nuclear

❖**Tourism**

ICT integrated ecosystem based on Open Data/Open Services with integration of data from urban sensors (e.g. traffic data from transport companies) and participatory sensing (sensors supplied by users e.g. smartphones)

❖ **Technologies for cultural heritage**

Development and application of ICT technologies for cultural heritage, particularly for the acquisition, storage, distribution and exploration of sites and artifacts

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