

## Ortho-correction of remotely sensed images using control points

An aerial or image of the Earth's surface must be ortho-corrected, or processed to remove the distortions caused by the geometry of the image, before it can be used as an effective representation of reality. This process requires information about the features of the land, particularly reference points on the ground whose absolute position is known and which can be identified in the image. This information is not always available and often entails expensive research. The idea arose from the analysis of satellite radar interferometry data: using well-established technology, it is possible to extract a large number of points from a set of images that represent permanent radio signal reflectors (structures such as corners of buildings, metal objects and rocks). This data is then processed to find the absolute position of the reflectors by comparing the heights of the points with a model of the ground that represents the average altitude of the area being recorded. Since this type of model exists for anywhere in the world, this method can be applied even in countries where no other absolute reference points are available. The results obtained during the test phase are excellent: using high-resolution COSMO-SkyMed data, the correction is up to five times more accurate than the technology currently available.



FROM LEFT, GERARDO D'ANDRETA, FRANCESCO TRILLO, MARIO COSTANTINI, FRANCESCO VECCHIOLI

## ... and the two projects that got a special mention!

### GEObird • data e Surveillance Services with small Unmanned Aerial Vehicles (UAVs) for emergencies

The proposal was created by a joint Italian and Spanish team on the basis of collaboration between Aurensis and Telespazio SpA, with further collaboration between other subsidiaries planned in the future. This innovation involves the use of a combination of existing technologies, based on the deployment of small, unmanned aircraft (Low Altitude Low Endurance UAVs) that do not require special permits and carry a payload of reconfigurable micro-sensors, with the aim of providing surveillance and alert information to civil protection authorities or security forces in general. The innovation is of particular interest because it allows extremely useful area information that completes the picture of a zone already monitored by satellite images to be provided quickly and at a highly competitive price. GEObird could therefore assist emergency services, primarily fire services and disaster-relief services, in front-line surveillance missions by providing real-time, georeferenced, visual information about the areas affected before, during and after the event.



ON THE LEFT, GIANCARLO PENSABENE, GIANCARLO COSENZA;  
ON THE RIGHT, JORDI PASCUAL VAL

### Global Maritime

Recent market research has identified strong demand for IT and communications services in the maritime market. Telespazio has picked up this "challenge" created by market requirements by implementing a portfolio of mobile connectivity services for the maritime sector. The key characteristics of these services are: the global supply of broadband connectivity (worldwide maritime); global roaming; the standardisation of service profiles (flat service); cost reduction for customers (cost effectiveness); IP convergence; the inclusion of value added services (VoIP, Intranet, multimedia, remote monitoring) and a return on investment. The main share of the market comprises ships that are already equipped with, or could house, antenna systems that can move from traditional satellite communications to the type of communication mentioned above. The maritime market will also be one of the more rapidly growing markets in the next few years. In this context, Telespazio is not an "additional player" but the primary operator since it has no competitors in terrestrial connectivity services.



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