



# **Overview on ESA EO-TLC integrated applications projects for capacity building in Africa.**

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## **World Summit on Information Society**

**The UN General Assembly Resolution 56/183 (21 December 2001) endorsed the holding of the World Summit on the Information Society (WSIS) in two phases. The first phase took place in Geneva from 10 to 12 December 2003 and the second phase took place in Tunis, from 16 to 18 November 2005.**



# WSIS Activity Report Outcomes

- 1. Satcom systems, services and solutions can play an important role especially in the areas of:**
  - **infrastructure**
  - **applications and services**
- 2. Initiatives should be conceived and carry out in partnership with main stakeholders of the specific field of action; this in order to maximise the effectiveness and impact of activities**



## **WSIS Action Plan Objectives shall be achieved through following targets:**

- **Connect villages with ICTs and establish community access points;**
- **Connect universities, colleges, secondary schools and primary schools with ICTs;**
- **Connect scientific and research centres with ICTs;**
- **Connect public libraries, cultural centres, museums, post offices and archives with ICTs;**
- **Connect health centres and hospitals with ICTs;**



## **ICT Satcom Solutions for strategic Development Actions (1)**

- **Connectivity is not a sufficient condition to favour economical development.**
- **Applications are needed, and ESA is active on this sector too.**



# **ICT Satcom Solutions for strategic Development Actions (2)**

**Potential action lines (ESA view):**

- 1. Capacity Building for communities development**
- 2. Access to information**
- 3. E-learning**
- 4. E-Health**



## Capacity Building (1)

**Space technologies can contribute to development as one tool among others, even more so if several space technologies are used together (EO, telecom, positioning) and with ground based technologies (integrated applications).**

**As part of this effort and in line with a coordinated action with the EC, ESA strives to support the development of local infrastructures and applications in those national and regional African institutions associated with ESA Applications Projects.**



## Capacity Building (2)

**As first example of EO-TLC integrated application project, ESA has extended to the African continent the DDS (Data Dissemination System) services that provide for the dissemination of large amounts of near-real-time Envisat sensor products, through integration of Earth Observation and Telecom technologies.**





## **DDS Africa (1)**

- **DDS is a “neutral” industrial capability fulfilling different requirements, including different data policies.**
- **It is offered to ESA Member States EO mission operators, institutions, commercial distributors, value-added companies to receive and disseminate data inside their ground segment and to end users.**
- **It is capable of a fully reliable delivery of large sensors data sets.**
- **It is able to support both on-demand products distribution and products routinely generated and disseminated.**



## DDS Africa (2)

- It is able to support stringent data policy requirements as traceability of delivered data and capability to restrict user access on a product per product basis .
- More than 2 TBytes of Envisat sensing products have been disseminated up today to selected African centres using the ESA DDS satellite uplink facilities, with new products (coming also from non ESA external data providers) and users steadily added to the dissemination network.



## DDS Africa (3)

### Current DDS operational stations in AFRICA:

- CRTS (Rabat, Morocco),
- ASA (Algiers, Algeria),
- CSE (Dakar, Senegal),
- Agrhymet (Niamey, Niger),
- RCMRD (Nairobi, Kenya),
- Department of Oceanography, University of Cape Town ( Cape Town, S. Africa).

### Planned:

- SADC (TBD - Botswana).



# DDS Africa (3)



*UN/Morocco/ESA International W/S on the Use of Space Technology  
for Sustainable Development – Rabat 2007*



## **DVB-RCS Africa (1)**

- **Furthermore, ESA will soon make available dedicated to application projects, DVB-RCS bidirectional satellite connectivity, providing the African users with an efficient mean to access broadband services.**
- **This will mitigate the “digital-divide” issue, often still present in Africa, allowing a smooth and reliable flow of E.O. application data and services toward national and regional institutions.**



## DVB-RCS Africa (2)

**Several ESA and non-ESA Application Projects are already actively considering this specific ESA application platform, which is planned, as well as DDS, to be part of the ESA contribution to the global GEONET initiative.**



## DVB-RCS Africa (3)



## Conclusions (1)

- **The current DDS set up for application projects for AFRICA is operationally used since 2005. 6 receiving stations are operational at the moment.**
- **DDS is based upon the result of an integrated application project between Earth Observation and Telecommunication.**
- **DDS efficiently contributes to the implementation of ESA cooperation activities with partners (JRC, Tiger, Charter, 3<sup>rd</sup> Party Missions operators, etc.).**





## Conclusions (2)

- **Along the European EO ground segment strategy, is the use of a “neutral” industrial capability shared with ESA Member States EO mission operators, institutions, VACs, etc.**
- **Bidirectional satellite connectivity will be available soon with DVB-RCS.**
- **Both DDS and DVB-RCS extensions are planned to be part of the ESA contribution to the global GEONET initiative.**