Supporting Education and Capacity Building of GNSS in Destitute Regions

9th Meeting
Prague
10-14 Nov. 2014
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GNSS - a Component of the Global Critical Information Infrastructure

- Precision Agriculture
- Surveying & Mapping
- Aviation
- Communications
- Disease Control
- Power Grids
- Trucking
- Shipping
- Oil Exploration
- Fishing & Boating
- Personal Navigation
GNSS have proven to be very accurate.

Very Reliable

99.9% of Availability

100+100 of Applications

Millions and millions of Users
SO WHAT IS THE PROBLEM?

The Problem: Is there are still multi-millions of people never heard about GNSS not benefiting its useful applications?
APPROACHES THE DESTITUTE COMMUNITIES

Info. Dissemination

WS
Conf.
Ed. P

Implement

Coverage
Users

MU

National
International

APPs
Disseminate the Knowledge
WHAT ARE THE PAY-BACKS

- Open Markets for GNSS Applications
- Expand Coverage for Monitoring and Integrity
- Develop Info-Network for Decision Making
- Enhance Insurance-Based GNSS Business
- Create Jobs in the Advanced Technologies
- Improve World-Wide Safety of Transportation
- Navigate the Opportunities for Service Providers
- Win-Win Economic Value -Added

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GNSS EDUCATION

- Why we need to teach
- What we teach
- How we teach
The Objective of The Education

- To increase cooperation between stakeholder partners and industry.
- Enhance the capabilities of member States, at the regional and international levels, that can advance their scientific and economic development.

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Several centers were supported by The UN Program on Space Applications, two of them in Africa.

- The French media in Morocco.
- The English media in Nigeria.

The centers provide postgraduate education, research and application programs in GNSS technologies.
GNSS
UN APPROVED COURSE

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<table>
<thead>
<tr>
<th>GNSS Module Topic Duration in hours</th>
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<tbody>
<tr>
<td>Lectures</td>
</tr>
<tr>
<td>I: Fundamentals</td>
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<tr>
<td>II: Position determination techniques</td>
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<td>III: Technologies: augmented systems</td>
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<td>IV: Sensors and embedded system design</td>
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<tr>
<td>V: Receivers</td>
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<tr>
<td>VI: GNSS/INS integrated navigation</td>
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<tr>
<td>VII: GNSS applications</td>
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<tr>
<td>VIII: Space weather and GNSS</td>
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<tr>
<td>IX: Lab. experiments, field visits, project work</td>
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<td>30 hr week x 36 = 1080</td>
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GNSS Education in Universities

- University courses consist of one postgraduate semester mainly oriented to civil engineering and surveying.

- Professional Education, The Arab Academy for Science and Technology and Maritime Transport delivers courses based on IOM guideline for both graduate and undergraduate courses.
GNSS IMO COURSE (22 Hours)

GPS (16 HOURS)
GALILEO (2 HOUR) IMO
GL ONASS (2 HOURS)
DGPS – Differential GPS (2 HOUR)
Road Map

Y1 → GPS → W.S → GLO
Y2 → COM → GAL
Y3 → QZSS → IRN

MU
UNOOSA + EG. Auth.

International Conference

Y4

International Conference + Celebration

Y5 → GNSS App. → EC. Add. Val.

S. Courses

Agreement
UNOOSA + EG. Auth.

Approved UN. GNSS Course

Y6 – Y9

GNSS Graduate

Y10 → International Conference + Celebration
Conclusions

- There are incredible opportunities in Worldwide with GNSS.
-- With a concerned cooperation, all users should receive benefits of Economic and Safety
• The UN and the European Commission have launched many initiatives to promote GNSS in some regions.
Conclusions

- Education strengths top level stake holders in the field of GNSS
- There is an urgent need to set up a framework for education program in the Destitute Regions
- Egypt is highly recommended for addressing different educational initiatives.
To Build Capacity Building

It's never too late

Neither too early

It's never too early...
Thank You!