GNSS Application Questionnaire
R&D Status Update

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Shanghai Jiao Tong University, China
8, June, 2016
OUTLINE

1. Background

2. GNSS Application Questionnaire

3. Future Plans
## Overview of App SG Meetings

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Venue</th>
<th>Date</th>
<th>Theme</th>
<th>In conjunction with</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Munich, Germany</td>
<td>2012/3/12~13</td>
<td>Mass Market Liability</td>
<td>Munich Summit 2012</td>
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<tr>
<td>3rd</td>
<td>Daejeon, Korea</td>
<td>2013/7/18</td>
<td>Mass Market Disaster Management Agriculture Surveying Timing</td>
<td>National GNSS Research Center Symposium 2013</td>
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<tr>
<td>4th</td>
<td>Jeju, Korea</td>
<td>2014/10/22</td>
<td>SBAS Surveying Mass Market Disaster</td>
<td>International Symposium on GNSS 2014</td>
</tr>
</tbody>
</table>
1. **Background (1/4)**

Several core applications were identified by App SG to monitor, such as, Disaster management, Personal Navigation, Transportation, Surveying, Agriculture, Liability Applications, Timing

**Dominant subject (presentation numbers):**

- Disaster management  30%
- Transportation  13%
- Personal Navigation  30%
- Surveying  13%

**Notice:**

- Indoor – Outdoor Seamless PNT services are highly required for disaster management, personal navigation and etc.
- Multi-GNSS is effective for improving the availability.
- High precision positioning (~cm-level) is required for some APPs.
1. Background (2/4)

Distinct performance are required in different services
1. Background (3/4)

Objectives:

• Identify GNSS performance requirements in various domains
• Link user requirements with industrial circles
• Offer suggestions to GNSS service and product providers
# 1. Background (4/4)


## GNSS Application Requirement Questionnaire

<table>
<thead>
<tr>
<th>No.</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>My application domains mainly within:</td>
</tr>
<tr>
<td></td>
<td>- Science</td>
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<tr>
<td></td>
<td>- Education</td>
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<tr>
<td></td>
<td>- Transportation</td>
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<tr>
<td></td>
<td>- Astronautics</td>
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<td>- Timing</td>
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<td>- Monitoring</td>
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<td>- Surveying</td>
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<td>- Aviation</td>
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<td>- Meteorology</td>
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<td>- Hydrology</td>
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<td></td>
<td>- Agriculture</td>
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<tr>
<td></td>
<td>- Disaster Management</td>
</tr>
<tr>
<td></td>
<td>- Personal Navigation</td>
</tr>
<tr>
<td></td>
<td>Others: ______</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>What could be suitable channel to collect and deal with the end-user comments and suggestions?</td>
</tr>
</tbody>
</table>

My name: ____________________  Affiliation: ____________________

Tel: ____________________  Email: ____________________

Thank you for your answers for the questionnaire!
2. GNSS Application Questionnaire (1/7)

System Functions:

- Multi user survey simultaneously
- Question logic design
- Various question types
- Specific user link
- Result processing & analyzing
- Conclusion report
System Architecture:

- Database: MySQL
- Code Language: PHP
- Server: Aliyun
- Data Analysis: SPSS
2. GNSS Application Questionnaire (3/7)

**Question Classification:**

- User Background Investigation
- Public Questions
- Industry Catalogue Questions
- Test Questions
- Personal Information Collection
2. GNSS Application Questionnaire (4/7)

Questionnaire Logic:

User Background Investigation
- Public Questions
- Industry Catalogue Questions

User Background Investigations:

- Personal Background
- Applications
- Products
- Degree of Satisfaction
2. GNSS Application Questionnaire (5/7)

**Public Questions:**
- Accuracy, Integrity, Availability, and Continuity
- Fusion Navigation
- Vulnerability

**Industry Catalogue Questions:**
- Aviation
- Agriculture
- Astronautics
- Personal Navigation
- Surveying
- Timing
- UAV
- …
2. GNSS Application Questionnaire (6/7)

R&D Status:

ICG-10 Initial Question Bank (16 questions)

From March, 2016 Question expansion

More than 120 questions

April, 2016 Question refinement, Classification and logic connection

Questionnaire system development

April 18, 2016 Modified (80) question bank

May 6, 2016 Beta 1 Test

May 13, 2016 Beta 2 Test

May 26, 2016 Beta 3

More than 120 questions

April, 2016 Question refinement, Classification and logic connection

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Welcome Page:

This is a GNSS application requirement and satisfaction degree questionnaire! Thanks to the supports from United Nations Office for Outer Space Affairs, the questionnaire is to provide a necessary input for International Committee on GNSS Service Performance Enhancement Work Group Application Subgroup to finalize a report of GNSS Application Catalogues. We sincerely appreciate your valuable contributions, and all your opinions and information would be processed seriously! Thank you!

Welcome!
3. Future Plans

- **June, 2016**: Distribute Questionnaire (Beta 3) to all representatives of this meeting for suggestions
- **Until July**: Further modifies of question bank and questionnaire system
- **From August**: Execute modified questionnaire in the website of UNOOSA
- **Before ICG-11**: Draft result report
THANKS VERY MUCH
FOR YOUR ATTENTION

http://121.42.29.87/index.php/638953?token=270KYstjy24SWqd&lang=en