

# **Status Report on “GNSS Application Catalogues” User Requirement and User Questionnaire**

**By ICG WG-B Application Subgroup**

Dr. Jun SHEN, UniStrong, China  
Dr. Izumi MIKAMI, SPAC, Japan

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International Committee on  
Global Navigation Satellite Systems

# OUTLINES

1. Activities after Xian ICG-13 & Vienna meeting
2. Final structure of Questionnaire for Review
3. 1<sup>st</sup> draft of Application Catalogue & Source of Each Content for Review
4. Follow-up of Near Term Plan Shown in Vienna
5. Discussion

# ICG-WG B Application Subgroup: Activities after Xian ICG-13 & Vienna MTG

Surveyed on existing reports on GNSS user requirement

Dec. 2018-Jan 2019

Improved Questionnaire to minimize potential overlap with published information

Apr. -May 2019

Established the final draft of Questionnaire for members review & the first draft of GNSS Application Catalogue to start discussion

May- Jun 2019

Made interim report on Questionnaire & Application Catalogue in Vienna & received request to start Questionnaire pending check of GNSS vulnerability questions and consent by other Working Groups.

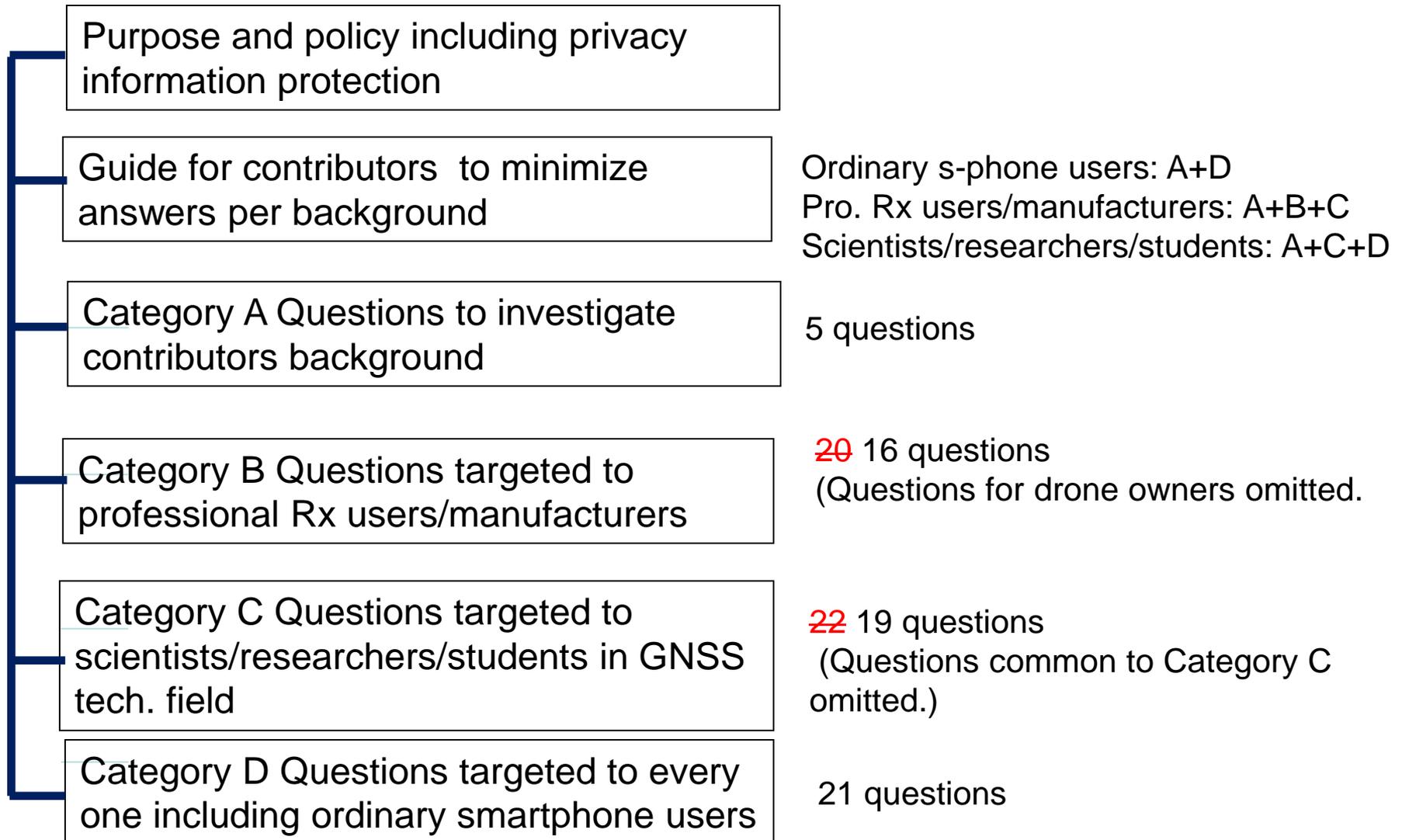
Jun 12, 2019

Issued request for feedback from other Working Groups on questions on GNSS vulnerability issues via WG-B cochairs.

July 2019

Sent memo to all AppSG members and PoCs to check AppSG members names at each PoC, share Vienna report and request review & comment on accelerate SG activity. Aug. 2019

# Final structure of Questionnaire for Review



# 1<sup>st</sup> Draft Application Catalogue Table of Contents & Source of Each Content for Review

1. Introduction
  2. GNSS service trend of the world
    - 2.1 Positioning and navigation by GNSS and RNSS
    - 2.2 Timing
    - 2.3 Messages
    - 2.4 Search and resque
    - 2.4 Others
  3. The world status of GNSS application
    - 3.1 Professional areas
    - 3.2 Consumer areas
    - 3.3 Achademic and special areas
    - 3.4 Others
  4. Occurrence status of GNSS siganl vulnerability problems
    - 4.1 Multipath
    - 4.2 Spoofing
    - 4.3 Jamming
    - 4.4 Others
- Utilize published reports with refernece
- Use Questionnaire answer data
- Use Questionnaire answer data

# 1<sup>st</sup> Draft Application Catalogue Table of Contents & Source of Each Content for Review

## 5. How to increase GNSS application

5.1 GNSS services

5.2 Technology fusion

5.3 Sensor fusion

5.4 Augmentation

5.5 Seamless PNT

5.6 System fusion

5.7 Others

Use Questionnaire answer data

## 6. How to mitigate GNSS signal vulnerability problems

6.1 GNSS services

6.2 Ground infrastructure

6.3 Receivers

6.4 Integrators

6.5 Liability protection

Use Questionnaire answer data

TBD

## 7. Possible future GNSS+ application

7.1 TBD

7.2 TBD

7.3 TBD

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Use Questionnaire answer data

## 8. Annex

8.1 Cool and "hottest" consumer application

8.2 TBD

Use Questionnaire answer data

# Follow-up of Near Term Plan Shown in Vienna

- Distribute, via representatives, co-chairs letter; “Request for members collaboration to APP-SG activity “ with “Questionnaire (Final Draft)”, and “Application Catalogue Table of Contents (for discussion)” to start our activity as a team. (by Jun 25) **DONE**
- **All SG members will exchange opinions via e-mail** and set up target date of completion of the answer collection, data processing, etc., and regular follow-up system including interim meetings to realize each target date. (by the end of July)  
**AWAITING**
- Target date of draft of the Application Catalogue will be also set up by APP-SG. (by the end of July). The timing of Application Catalogue publication is still TBD, but hopefully by the end of this year. **Subject to consent of other WGs on GNSS vulnerability questions**
- Also we pick up hints from the answers, and establish the next theme to study in APP-SG with regard to GNSS+ application.  
**Subject to consent of other WGs on GNSS vulnerability questions**

# Discussion

- Should everyone thinks worthwhile to go forward with the current project, we need more proactive participation and cooperation.
- Provided the GSA's comprehensive market report, an alternative would be to use it as a basis, and we should investigate additional requirements which WG-B members are interested in.
- Any specific interests to be included in the Application Catalogue/Questionnaire, or should we start new projects that the WG-B is more interested in?