

## **IAA Study Group Status Report – SG 4.18**

**Responsible Commission:Comission-4**

**Study Number and Title: Definition and Requirements of Small Satellites Seeking Low-Cost and Fast-Delivery**

**Short Study Description** (repeat from Study Group Proposal):

In recent years, explosive growth of small satellites launch raises concern over space debris and safety. Small satellites range from a 1kg Cubesat to a satellite weighing well over 100kg, but have a common characteristic of low-cost and fast-delivery. In the past, small satellites, especially the smaller ones, have been used for educational or experimental purposes. Nowadays, however, even commercial Cubesats are envisioned. Commercial usage of small satellites raises concern over reliability as they cannot assure the same level of reliability as traditional large/medium satellites. In 2014, an activity started at ISO/SC14 to make an ISO standard that defines what is a small satellite and sets requirements for small satellites to answer those concerns and lay down the foundation of commercial activities utilizing small satellites. Although the ISO activity is intended for commercial satellites, satellites of educational or academic purpose may be affected by this standard. Inputs from the communities related to small satellites, especially university satellites and emerging countries to the ISO activity are highly sought-after. The study group will examine the definitions of small satellites that vary depending on countries or professions and try to reach consensus. The study group also differentiates the requirements every satellite should follow regardless its size from the requirements small satellites should have separately from the traditional satellites to keep their nature of low-cost and fast-delivery.

Practical benefit of this study group is to promote further growth of small satellite activity by clarifying the definition and requirements of small satellites that have been ambiguous and the source of confusion.

**Progress in past six months:**

Two study group meetings were held on October 14, 2015 at Jerusalem during 66th IAC and on December 4, 2015 at Rome during 3<sup>rd</sup> IAA CubeSat Workshop.

To the Jerusalem meeting, 13 people attended. Updates on ISO activities, especially the terminology regarding lean satellite, were given. Requirements on lean satellite were discussed.

To the Rome meeting, 45 people attended. Scaling of lean satellite was tested by the participants. Requirements were discussed in detail in conjunction with the draft of ISO/WD/20991.

A draft of study group report is distributed. The final draft will be released in March 2016.

**Website Study Information update:** (please give any update regarding Study Group Membership, documents, Study Plan and Schedule):

Website [http://cent.ele.kyutech.ac.jp/nets\\_web/nets\\_web.html](http://cent.ele.kyutech.ac.jp/nets_web/nets_web.html) is maintained. Minutes of Kobe meeting is distributed.

**Issues requiring resolution?** (recommend approach):

**Product Deliveries on Schedule?** (If modified explain rationale):

Yes.

**Study Team Member Changes?** (List any Study Team Members that you wish to discontinue, and provide names plus contact coordinates of any Members you wish to add on the second page of this Study Update form.) Note: Complete contact information including email, tel. and fax must be provided for all additions. Only Members with complete contact information will be listed and receive formal appointment letters from the IAA Secretariat.)

**Name of person providing Study Group Status** (Study Group Chair or Co-Chair):

Mengu Cho

**Status Report Date:**

March 2016

### **Study Team Membership Changes**

Effectivity Date:

**Discontinue:**

Name

Current email address

**Add:**

Name

Current email address

Tel.

Fax

Mailing address