

# ISO Standard for Lithium Ion Battery in Space Applications

Joe Troutman - Chief Engineer, ABSL Space Products

# What is ISO?



- “ISO (International Organization for Standardization) is a global network that identifies what International Standards are required by business, government and society, develops them in partnership with the sectors that will put them to use, adopts them by transparent procedures based on national input and delivers them to be implemented worldwide.”
- ISO TC20/SC14 Space Systems and Operations-
  - 14 Participating countries ; 6 Observers ; 7 Liaison Orgs.

# Background for Today's Session



- ISO TC20/SC14 Space Systems and Operations
  - International standard topic was developed for use of lithium ion batteries in space
  - JAXA (Japan Aerospace Exploration Agency) has accepted the leadership role for the standard
  - Draft “outline” of standard content was reviewed by participating members
  - Comments were submitted and the draft was approved for development into an international standard
  - Ballot was submitted for review, comments, and approval/rejection for developing an international standard.

© ISO 2002 – All rights reserved

Reference number of working document: ISO/TC 020/SC 14 N **000**

Date: yyyy-mm-dd

Reference number of document: **ISO/WD nnn-n**

Committee identification: ISO/TC 020/SC 14/WG 1

Secretariat: AIAA

## Space Systems — Lithium Ion Battery for Space Vehicle — Design and Verification Requirements

*Élément introductif — Élément principal — Partie n: Titre de la partie*

### Warning

This document is not an ISO International Standard. It is distributed for review and comment. It is subject to change without notice and may not be referred to as an International Standard.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

# Today's Discussion



- International team meeting was held at The Aerospace Corporation in Los Angeles in October 2011
- Discussions were held as to the proper content of an ISO standard that would be beneficial and accepted by the international community
- Discussions were also held between members of the ESTEC (European Space Research and Technology Center)
  - Although a positive vote was cast for the standard initial discussions resulted in a vote not in favour of an ISO standard at this time.
  - The recommendation was to produce an ECSS (European Cooperation on Space Standardization) through working group inputs to the ECSS Technical Authority.

# Today's Discussion



- Discussions need to occur to determine the content and implementation of a lithium ion space standard
  - Battery level?
  - Cell level?
  - Technical Report on the design and verification of space lithium-ion batteries prior to formal development of international standard?
  - European Cooperation on Space Standardization into international level?
- During this session it is the goal to further define the path forward in this process.

- Proposal development
- New Work Item Proposal - 3 month ballot
- **Approval, and registration (starts the “clock”)**
- Working Draft at 6 months
- Committee Draft at 12 months
  - CD/Comment, CD/Vote (3 months)
- Draft International Standard at 24 months
  - 6 month vote
- Final Draft International Standard at 33 months
- Published International Standard at 36 months

- Takeshi Kiyokawa representing JAXA is the lead for lithium ion battery topics.
  - Mr. Kiyokawa will provide results of further discussions within JAXA regarding the standard process