Science sUAS: Community Best Practices?

Research Data Alliance P9
sUAS IG kick off meeting
5 April 2017
Bacelona

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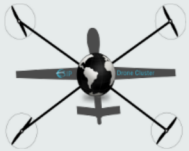
Introduction

"In the same way that the internet democratised telecoms, I think drones will democratise geospatial information gathering and analysis." - Chris Anderson, CEO of 3D Robotics

https://www.gim-international.com/content/article/the-revolution-of-drone-carried-sensors

Outline:

- Why a RDA sUAS data IG
- Who we know of currently working in this space
- Session



Why a sUAS Data IG

Value of Small Unmanned Aerial Systems **[sUAS]** to **science**:

- Data on demand / Data currency
  - Event-reactive data capture
  - High frequency re-sampling
- Greater accessibility:
  - Higher resolutions
  - Novel locations
- Improved safety
- Lowered environmental impact
- Cost savings

Increased Spatial and Temporal Resolution…

… means lots of data

"Drones will become a standard tool for Earth Scientists within the decade" - Unknown, heard in a USGS public telecon cica mid-2015

Why a sUAS IG

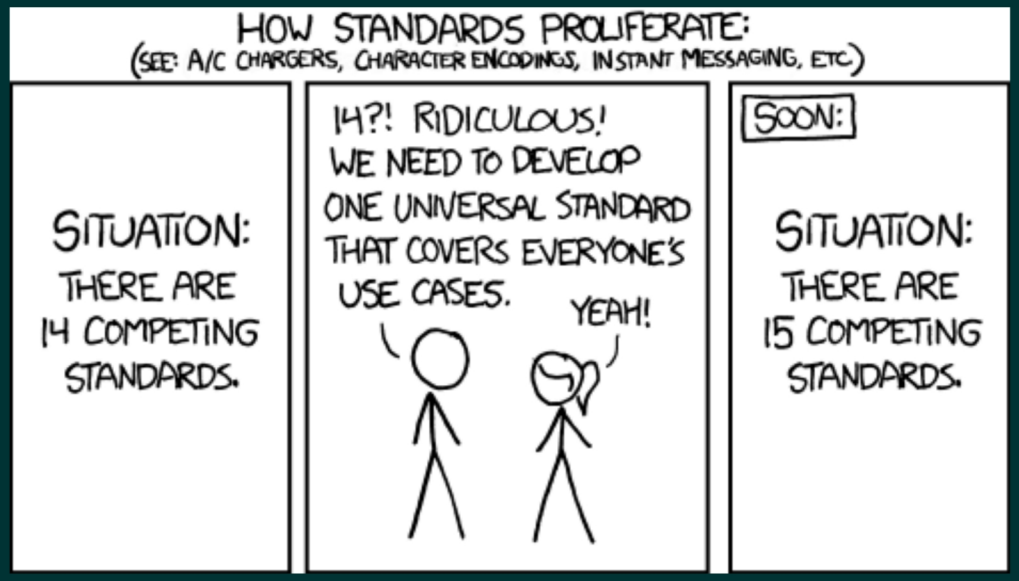
Standard flight procedures for different data

1) Standard sensor calibration and use procedures
2) Standard data post processing and error analysis procedures
3) Standard data formats and metadata requirements
4) Standard operating guidelines

Why a RDA sUAS Data IG

"*The RDA vision is researchers and innovators openly sharing data across technologies, disciplines, and countries to address the grand challenges of society.*"

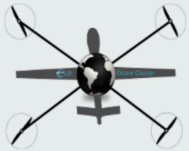
Need for a global community conversation



https://xkcd.com/927/

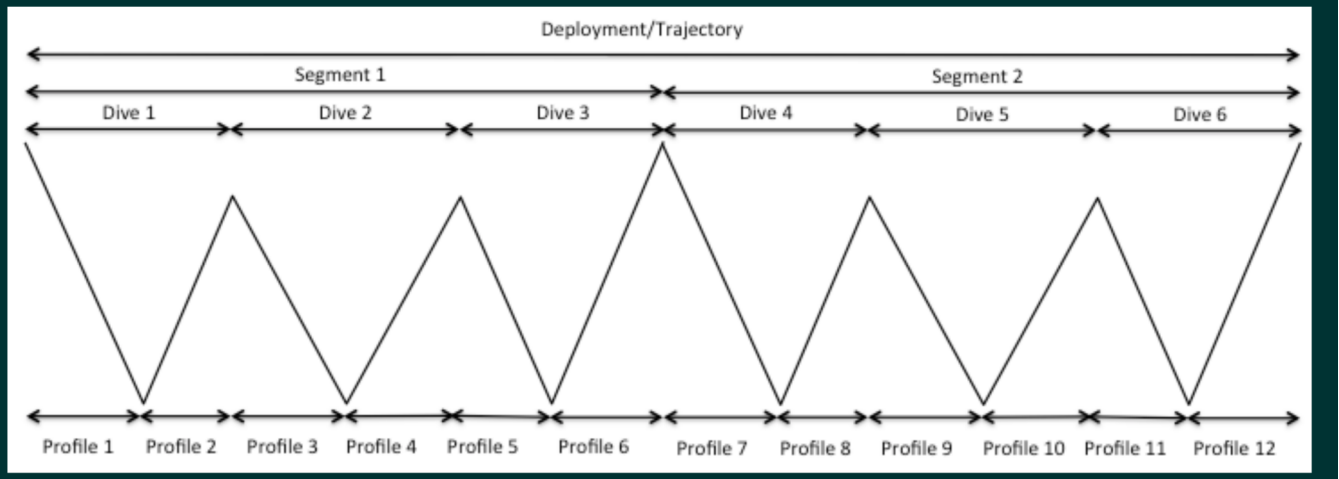
What is a RDA sUAS IG

- Our charter objectives (currently):
  - Provide a venue for data standards and recommendations comparisons with oceanographic UUVs, and other similar platforms.
  - Identify common and divergent data needs across sUAS implementations in different domains.
  - Identify a community aggregation point for others in the field who are currently isolated.
  - Identify community partnerships, including with industry, tech companies/manufacturers, and computing organizations and infrastructures.
  - Provide a venue for ongoing community discussion around the legalities, logistics and opportunities governing sUAS use, given that sUAS are a relatively new data collection platform.



Groups currently working in this space

- Atmospheric Scientists
- Remote Sensing and Spectral sensors
- Underwater Unmanned Gliders
- Standards Bodies
- ESI Laboratory
- Agriculture
- NGOs
- Others…



Session

- Speakers:
  - Dr Helge Aasen: Best Practices for sUAS Spectral Sensing
  - Dr Karin Anderson: Best Practices for operational science sUAS
  - Mr Scott Simmons: Perspectives from OGC's new sUAS WG
- Discussion
  - sUAS data IG
  - Ways to keep moving forward