



GNSS SDR Metadata Working Group Report

January 25, 2015
Dana Point, CA



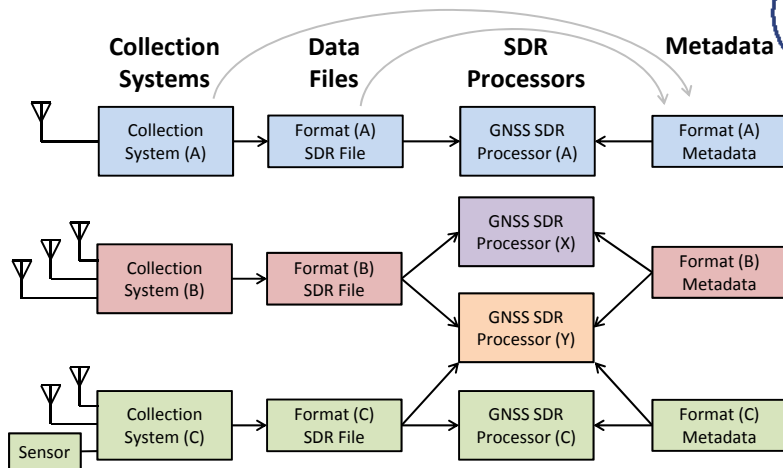
Background



- Proliferation of GNSS SDR technology in the past 5-10 years
 - Low-cost front-end hardware and data collection systems
 - Maturing GNSS SDR processors, receivers and software frameworks
- Today: no established standard to convey GNSS SDR metadata
 - Existing metadata standards not well suited for needs of GNSS SDR and PNT community
- ION SDR Metadata Standard
 - Objective: Interoperability between GNSS SDR data collection systems and processors



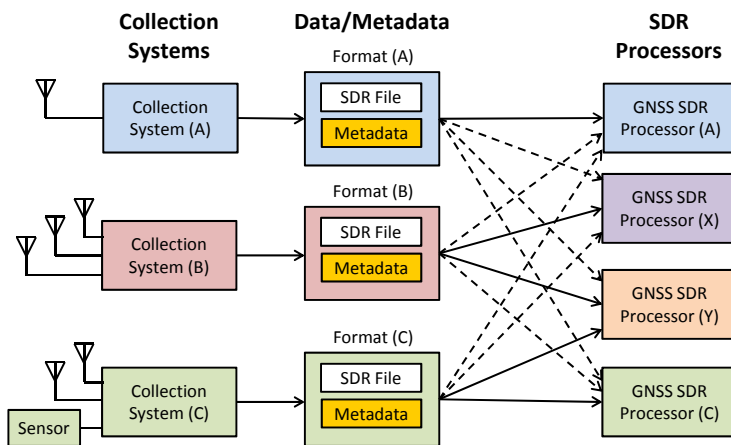
The Problem:



- Some front-end/DCS and SDR processors are bound to one another
- Ad hoc metadata exchange – prone to human error
- Does not promote interoperability
- Does not promote data/resource sharing and re-use

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Proposed Solution: Metadata Standardization



- Unambiguous transfer of all essential SDR metadata
- Standardization encourages vendors to support major formats
- Spurs community to develop open-source software handlers and plug-ins
- Promotes interoperability
- Promotes data portability, resource sharing and re-use

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SDR-WG Progress since Sept 2014



- Sept. 9: First in-person meeting
 - 30 attendees
 - Draft specification presented and discussed
 - Ad-hoc 'coding subcommittee' proposed
- Sept. 12: Initial report
 - Presented at software receiver session
 - Attendees encouraged to join and participate
- Sept 2014 to Jan 2015:
 - Added 15 members to WG (64 total)
 - Online discussions
 - Created ION GitHub repository
 - Developed draft XML schema (XSD) and API
 - Released draft standard document to WG
- Today: second in-person WG meeting



Major Accomplishments



- Draft standard document available to working group
- XML Schema Definition (XSD) available to working group
- Draft C++ API available to Working Group
 - Fully open-source (LGPL license)
 - Creates standard-compliant XML files
 - Reads standard-compliant XML files
 - Successfully integrated and tested on IFEN's SDR product
 - To be integrated to Loctronix's SDR products
 - Ready for download and testing on GitHub:
<https://github.com/IonMetadataWorkingGroup>
- Current Plan for Draft Standard
 - 4 weeks of alpha testing
 - 4 weeks of beta testing
 - Formal 1.0 release of draft standard expected in April 2015



Acknowledgements



- Thomas Pany (IFEN): WG Co-chair, Software API
- Mike Mathews (Loctronix): XSD spec., C++ API, GitHub
- Mike Braasch (Ohio U.): Geometry parameters
- Dennis Akos (U. of Colorado) & James Curran (Joint Res.Ctr.): Oscillator parameters
- WG members



Next Steps



- Current schedule not according to council approved Terms of Reference
- New proposed schedule (subject to change)
 - Formally release 'draft' standard and functional API by April 2015 (Pacific PNT)
 - Open public comment period of several months (on ION website)
 - Legal review *after* standard is informally adopted
 - Official adoption as ION standard: ION GNSS+ 2016

