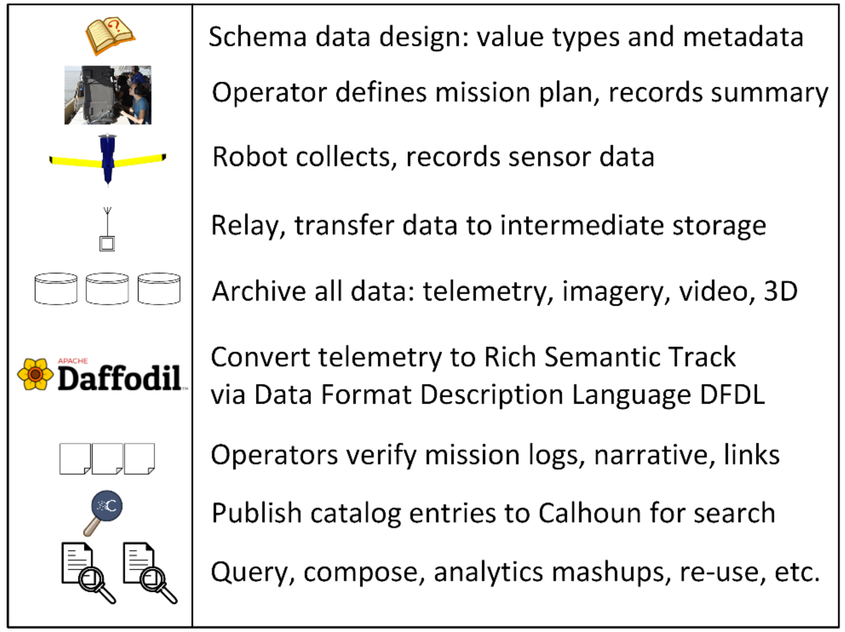
Robodata Daffodil: Converting Actual and Simulated Robot Telemetry and Metadata for Archival DTIC Publication

CRUSER
Consortium for Robotics and Unmanned Systems Education and Research



Robodata information flow provides a repeatable pattern

- Many years of cumulative prior work all remains sound, see robodata.nps.edu
- Curt Blais dissertation on Rich Semantic Track (RST) shows theoretical basis and practical exemplars for common-denominator track representations. among diverse vocabularies for robot/ship/aircraft/simulation missions.
- NPS Calhoun staff has expertise to verify correct application of reusable metadata suitable for archival storage and DTIC publication.
- Multiple projects with students in classes and theses have demonstrated viability of these approaches, steadily improving with each iteration.
- Data Format Description Language (DFDL) enables decorating a structured data model (such as RST) to formally annotate structured text/binary formats.
- Coherent data/metadata publication supports NPS, Navy, USMC missions.

- Continuing set of theses exploring crucial Navy challenges driven by defining measurements, tests, feedback loops, spiral development
- Develop data-collection procedures and support, put online
- Establish initial Calhoun storage capacities, equipment, access
- Collect, annotate, publish all ongoing FX experimental data
- Recover, annotate, publish all ongoing FX experimental data
- Tactical Data Strategy Imperatives: structured data as unifying path for system inputs/outputs, coherent interoperability, repeatability
- Training, exemplars by Graduate Writing Center (GWC), Robodojo
- This work supports multiple pillars in NPS Strategic Plan
- Piecemeal approaches waste time to reach same end state

- Artificial Intelligence is diverse, blossoming with common thread:
  AI turns data into information usable by humans
- Data will enable warfighters to win wars – but only if readable!
- CNO Maritime Design 2.0 unequivocally confirms that use of unmanned systems is Naval force multiplier, we must engage fully
- We know how this ends: 24x7x365 robot operations worldwide
- NPS students need reliable direct access to operational robots and data as part of daily activities, not just occasionally or intermittently
- Unleash inventive power of junior officers, clearly and repeatably
- Successful NPS patterns for learning from realistic UNCLAS robotics scenarios can be directly adapted to best practices for fleet forces

NPS PRAESTANTIA PER SCIENTIAM

FY20 Call for Proposals

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