



CORIOPIX

Cruise Observations Real-time Interface & Open Live Information eXchange

Chris Romsos · Jasmine Nahorniak · Katie Watkins-Brandt
Regional Class Research Vessel Program · Oregon State University





CORIOLIX

Cruise Observations Real-time Interface & Open Live Information eXchange



What's the purpose of the CORIOLIX system?



Is CORIOLIX just another Data Acquisition System?

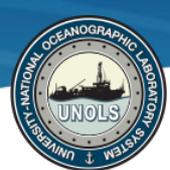


What can CORIOLIX do for you?



What's the status of CORIOLIX?





CORIOLIX



Cruise Observations Real-time Interface & Open Live Information eXchange



What's the purpose of the CORIOLIX system?

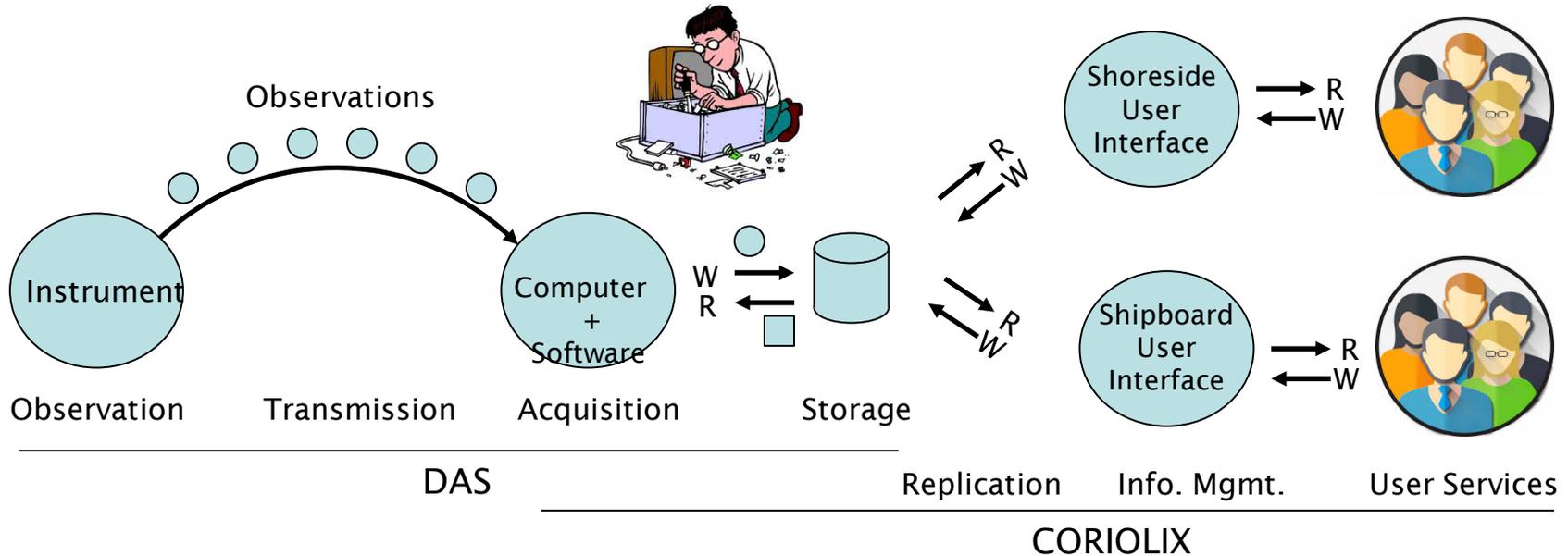
Requirement:

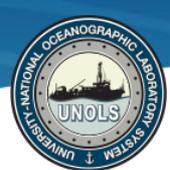
Capability:

-
- Near real-time underway data to shore → Send all or subset of data to shore, typically <1 s delay
 - Bi-directional information management → Sensor data to shore, metadata both ways
 - Standardized UI → Same application interface on both ends
 - Built-in Plotting → All sensors have live plots
 - Built-in Charting → Web mapping application for situational awareness
 - Enable Quality Assessment/Control → Near real-time quality flagging & Shoreside operational oversight



Is CORIOLIX just another data acquisition system?





CORIOLIX



Cruise Observations Real-time Interface & Open Live Information Exchange



What can CORIOLIX do for you?

Remote Participation

Facilitates quantitative remote participation:

- Shipboard and Shoreside parties use identical interfaces
- Shipboard and Shoreside data access API
- Global Alerts
- User Notifications

Remote Support

Enables shoreside monitoring of sensor systems for state of health.

Provides shoreside support team a means to perform data quality assessments in near real-time.

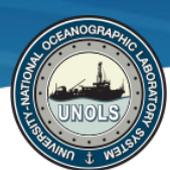
Information Management

Data Protection – moves data off ship as part of collection process.

Provides API/Webservice access for data assembly centers. Supports machine to machine metadata exchange.

Integrates maintenance and management system like tracking for scientific sensors.





CORIOLIX



Cruise Observations Real-time Interface & Open Live Information Exchange



What's the status of CORIOLIX?

RVTEC 2016

CONCEPTUAL POSTER

Circles, arrows, paragraph on back

RVTEC 2017

Romsos Presentation
Prototype deployed on
Oceanus
Database Replication Model

RVTEC 2018

Jasmine Presentation

Prototypes deployed on
Oceanus and Sikuliaq (no
shoreside)

MQTT pub/sub model
replaces Database replication

Charting tools further
developed

RVTEC 2019

Romsos Presentation & Demo

Prototypes deployed on
Oceanus and Endeavor (with
shoreside)

Ship to Shore and Shore To
Ship components

Technicians Interface Pages
not public yet.





CORIOLIX

Cruise Observations Real-time Interface & Open Live Information Exchange



Time	CFOS Research (O'Neill/Irving II Bldg)		Geophysical Institute (GI Eivey Bldg)			Vis Space + Dev Space (WRRB Bldg)		Globe Room/ Map Room	
13:30	Ocean Acidification Research Center (OARC) (15 Max)	Operations Oceanography Lab (20 Max)	Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) (15 Max)	Alaska Satellite Facility (ASF) (15 Max)	Alaska Earthquake Center (AEC) (15 Max)	Near Real Time Vessel Demonstration (30 Max)	VR Demonstration (15 Max)	Available for hangout between tours	
14:10	Tour Rotation								
14:20	Ocean Acidification Research Center (OARC) (15 Max)	Operations Oceanography Lab (20 Max)	Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) (15 Max)	Alaska Satellite Facility (ASF) (15 Max)	Alaska Earthquake Center (AEC) (15 Max)	Near Real Time Vessel Demonstration (30 Max)	VR Demonstration (15 Max)		
15:00	Tour Rotation								
15:10	Ocean Acidification Research Center (OARC) (15 Max)	Operations Oceanography Lab (20 Max)	Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) (15 Max)	Alaska Satellite Facility (ASF) (15 Max)	Alaska Earthquake Center (AEC) (15 Max)	Near Real Time Vessel Demonstration (30 Max)	VR Demonstration (15 Max)		
15:50	Tour Rotation								
16:00	Ocean Acidification Research Center (OARC) (15 Max)	Operations Oceanography Lab (20 Max)	Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) (15 Max)	Alaska Satellite Facility (ASF) (15 Max)	Alaska Earthquake Center (AEC) (15 Max)	Near Real Time Vessel Demonstration (30 Max)	VR Demonstration (15 Max)		
17:00	Buses from West Ridge to Pikes Lodge								

Please come see us in one of the 4 tour windows

We have live data streaming from Oceanus!

