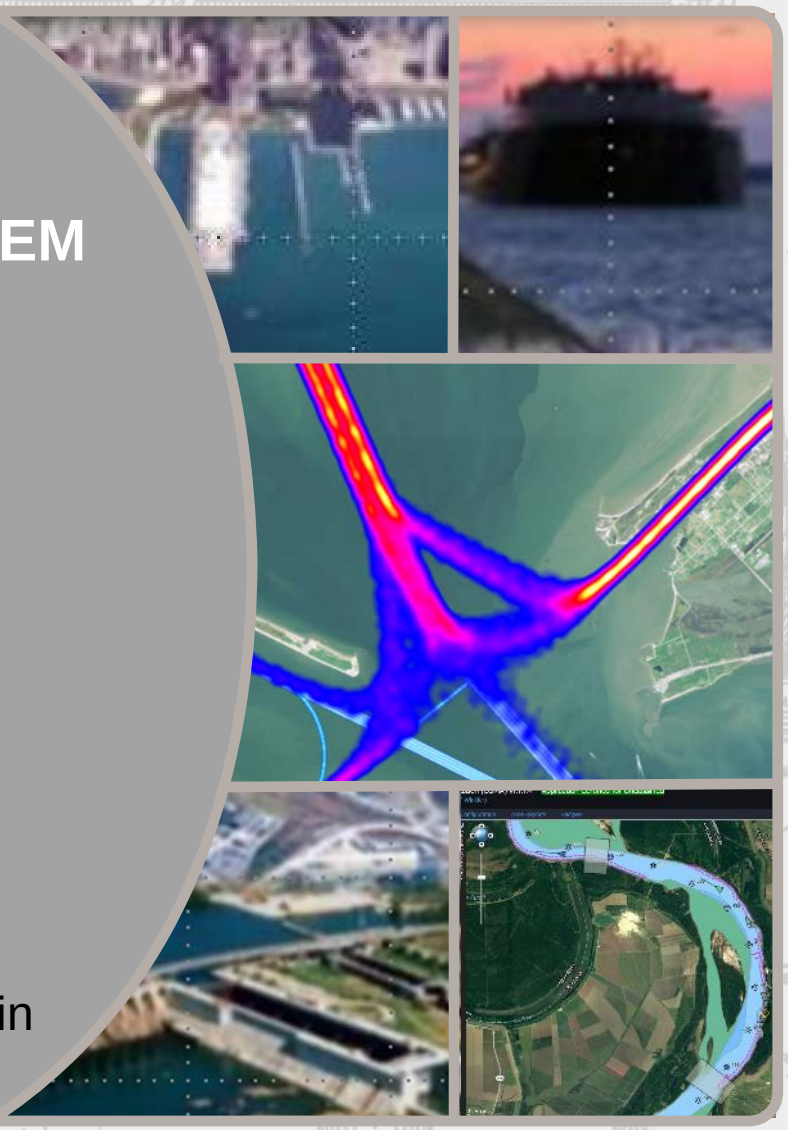

AUTOMATIC IDENTIFICATION SYSTEM ANALYSIS PACKAGE

AISAP LESSON 7: DWELL TIMES

Patricia DiJoseph, PhD

AISAP Training Class

9 January 2019

Team: Ned Mitchell, PhD, Brian Tetreault, Marin Kress, PhD, SAM-OPJ, ARA

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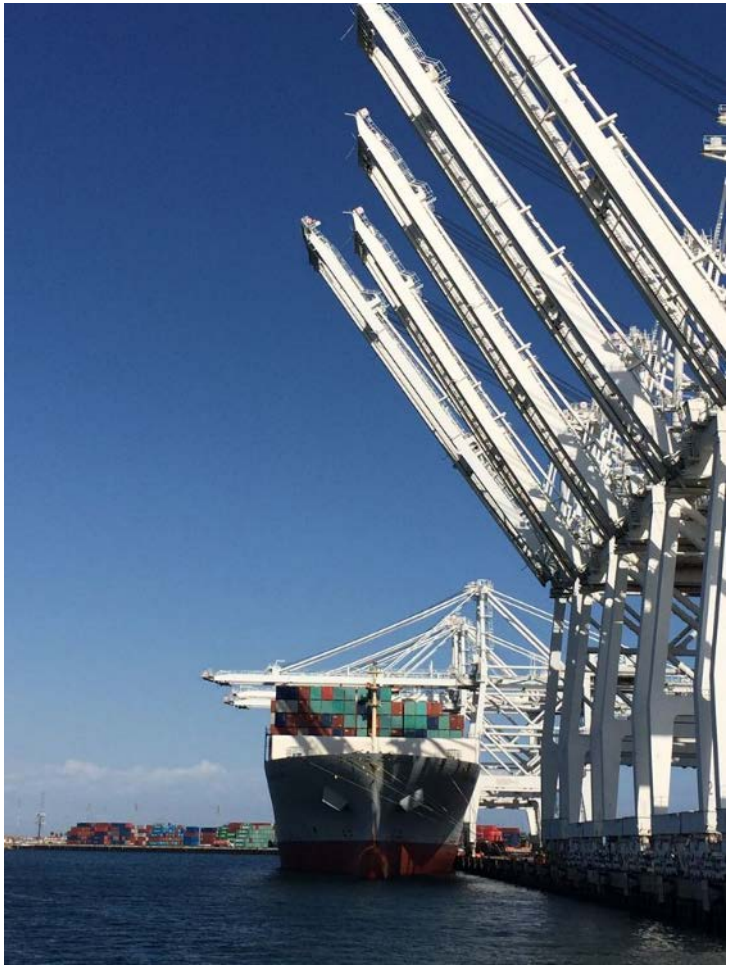
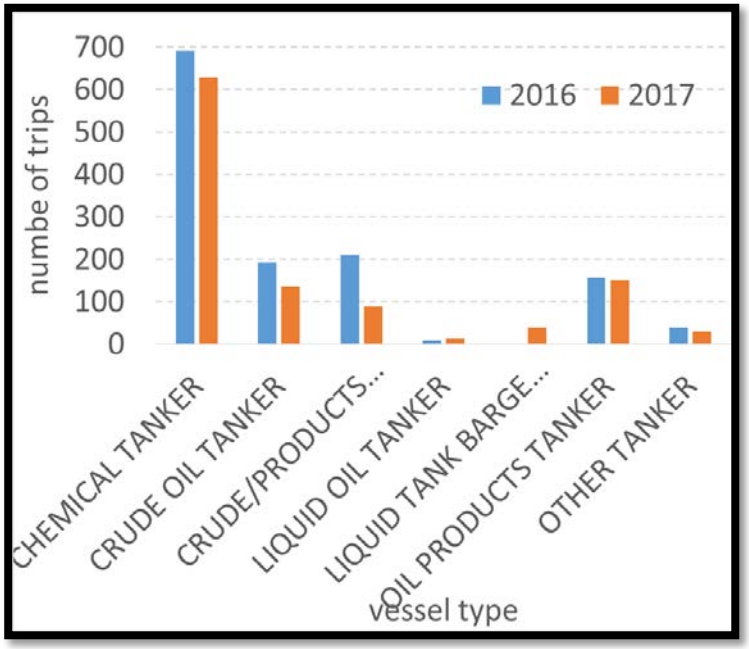
WHY DWELL TIMES

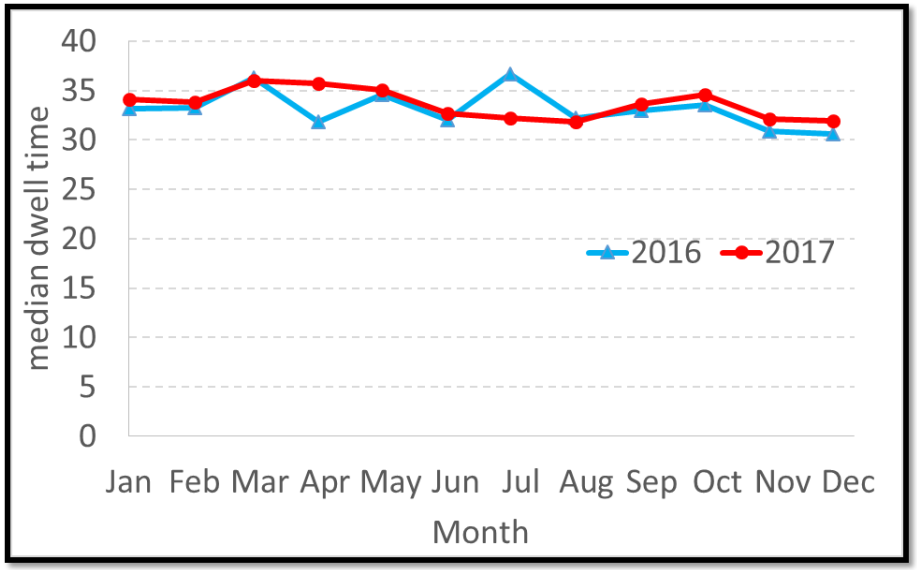
- Quantifiable performance measure
- Describe waterway usage
- Determine effects of events or O&M decisions on vessel traffic
- Identify changes over time
- Example applications:
  - When and for how long are vessels using a fleeting or mooring area?
  - How does a port shutdown affect vessels' waiting times at anchorage?
  - How long does a dredge spend in a location and when was it there?
  - Are vessels entering an environmentally sensitive area?



WATERWAY USAGE ANALYSIS EXAMPLES



Number of trips to a terminal by tankers by type, 2016 & 2017, Port of NYNJ



Median vessel dwell time at a terminal by month, 2016 & 2017, Port of NYNJ

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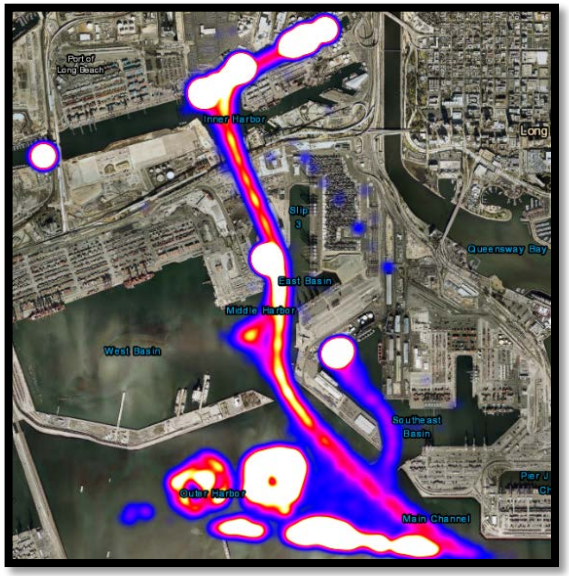
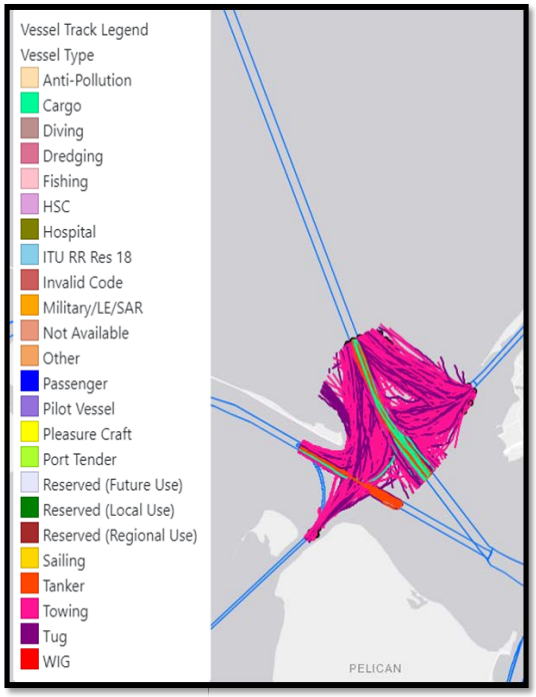
INFORMATIVE VISUALIZATIONS

Port of Long Beach Tanker Vessel Heat Map



Port of Long Beach Cargo Vessel Heat Map

HSC Usage by Vessel Type



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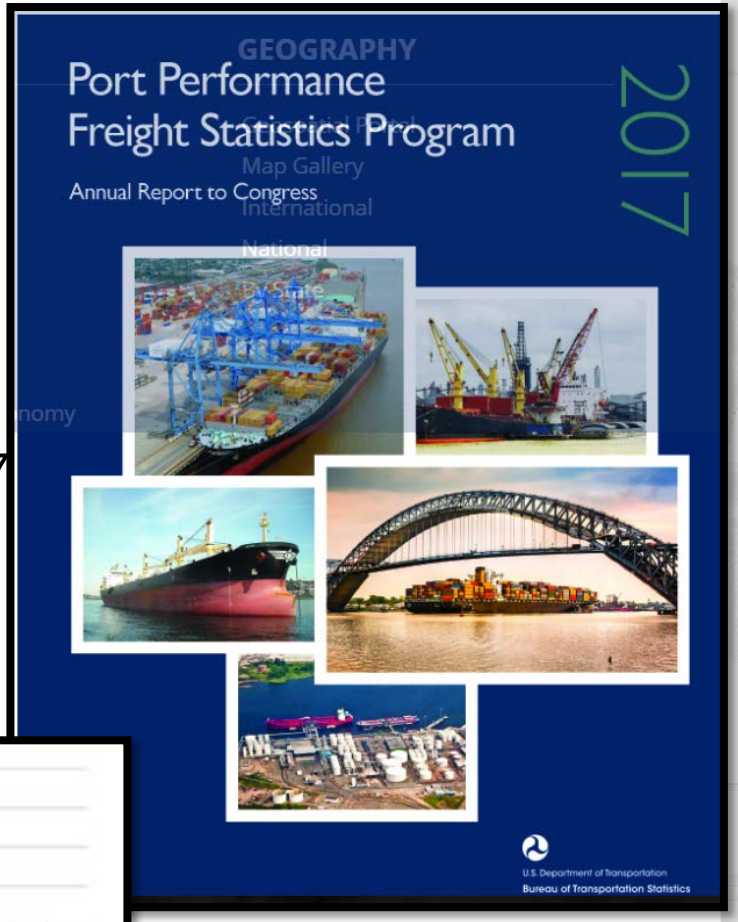
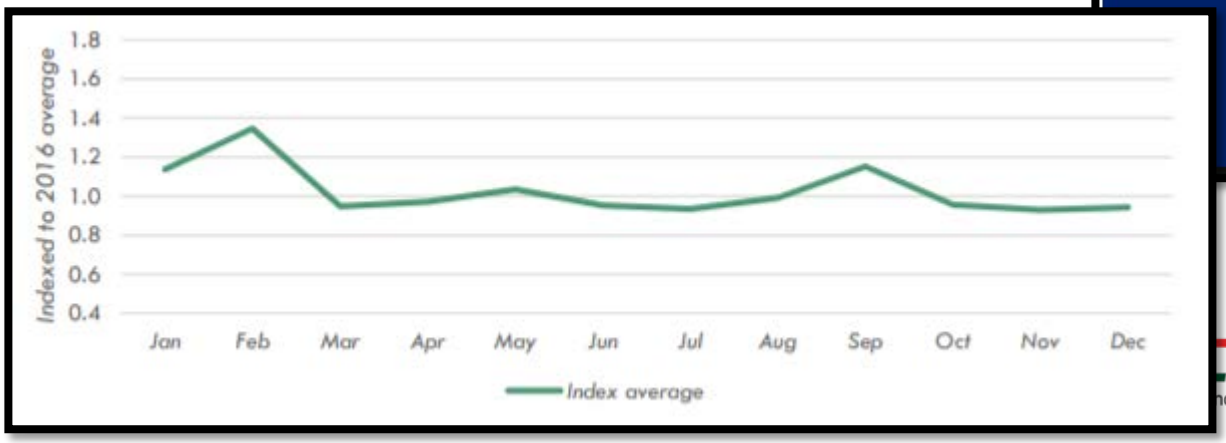
PORT PERFORMANCE FREIGHT STATISTICS PROGRAM: ANNUAL REPORT TO CONGRESS

- Provides port dwell time, throughput, and capacity statistics for coastal ports
- Published by USDOT Bureau of Transportation Statistics
- ERDC AISAP team is a contributing author
- Publically available
- https://www.bts.gov/port-performance-2017





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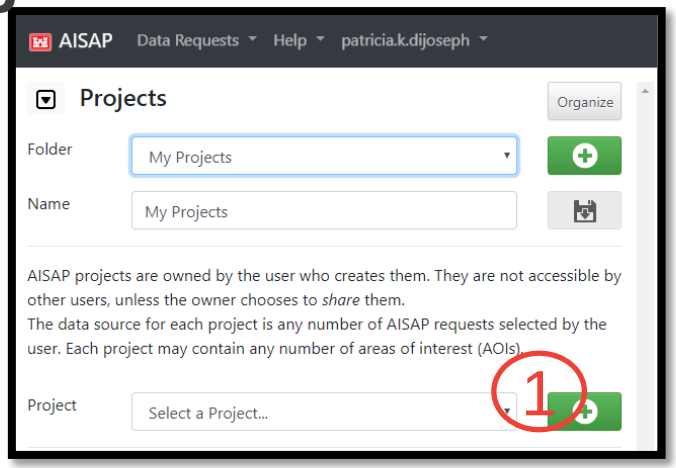
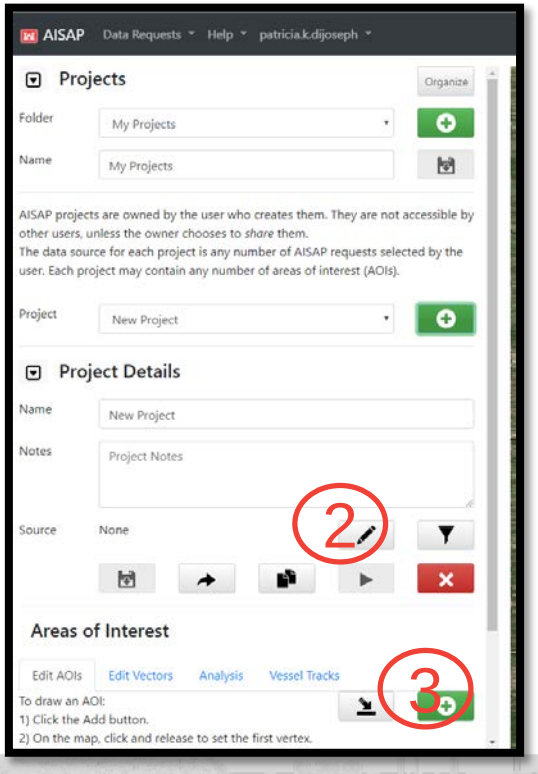
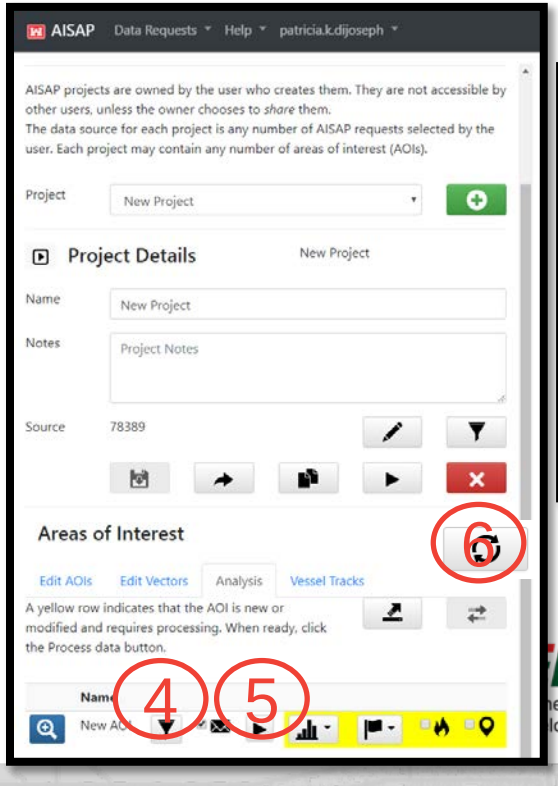
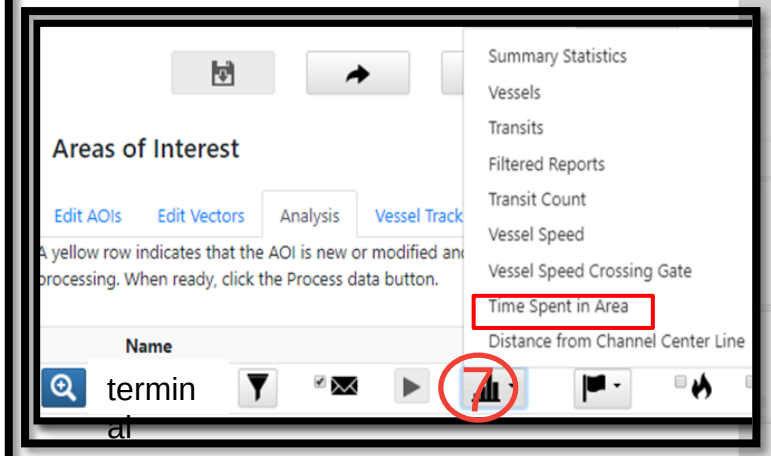
ANALYZING DWELL TIMES IN AISAP

1. Create a new project.
2. Add data (source) to the project.
3. Create an Area of Interest (AOI).
4. Add any additional filters to the AOI.
5. Process the AOI.
6. Once you receive an email saying the AOI has been processed, refresh the screen.
7. Go to Analysis tab → Statistics → Time Spent in Area.









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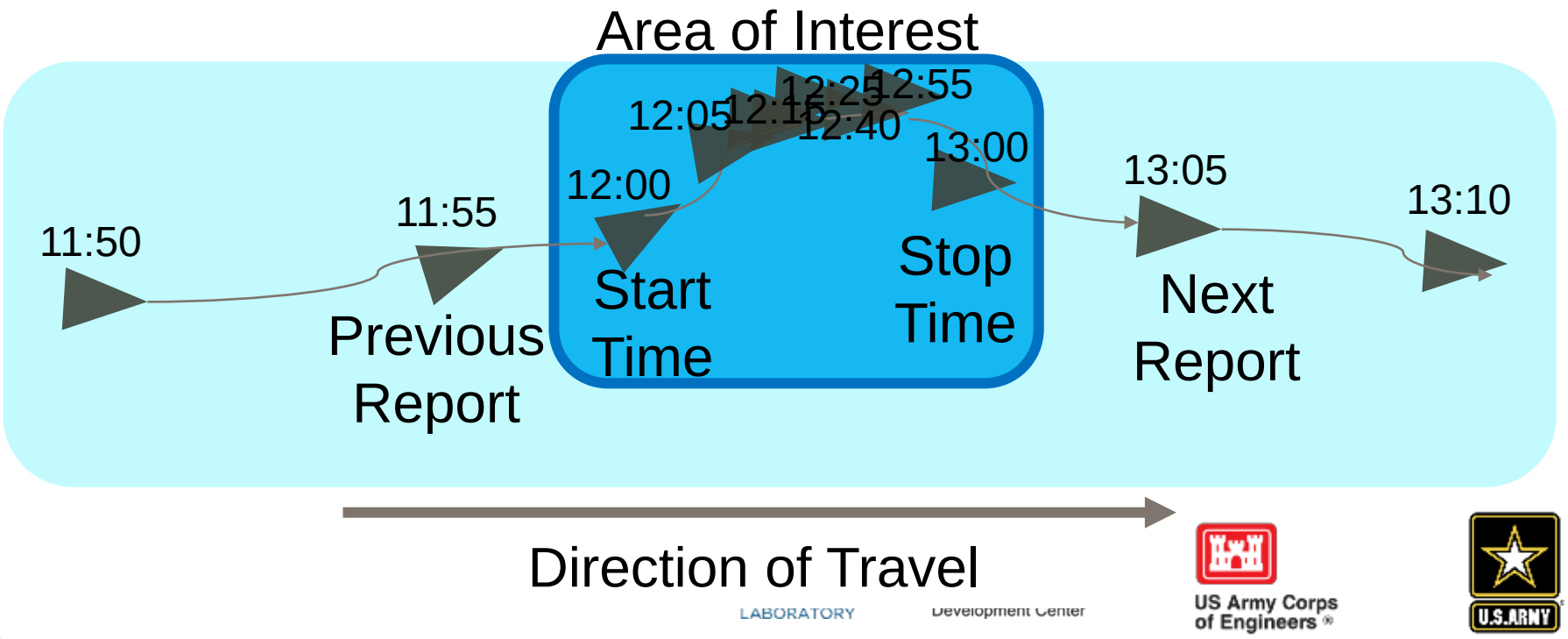
DWELL TIME OUTPUT FILE

MMSI	Vessel Info	Previous Report	Start Time	Stop Time	Next Report	Dwell Time Area Only	Dwell Time
3000	.....	10/10/2017 11:55	10/10/2017 12:00	10/10/2017 13:00	10/11/2017 13:05	01:00:00	01:10:00



THINGS TO LOOK OUT FOR

- Dwell Time Area Only may be an Underestimate
  - If a vessel AIS broadcast isn't exactly when the vessel enters or exits the Area of Interest
- Dwell Time may be an Overestimate
- The amount of time between previous report and start time should equal the sampling rate
- more than this may mean missed AIS broadcasts
- The amount of time between stop time and next report should equal the sampling rate
- more than this may mean missed AIS broadcasts

THANK YOU

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http://cirp.usace.army.mil/techtransfer/workshops/AIS2019/AIS-Workshop.php