Composite Source Feature File: Simplifying the Complexities of Near Shore Hydrography

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Outline

- What is Nearshore Hydrography?
- Streamlining Feature Management within the Office of Coast Survey.
- Utilizing Spatial Extract Transfer and Load technologies to simplify feature flow.
  - FME (Feature Manipulation Engine - Safe Software)


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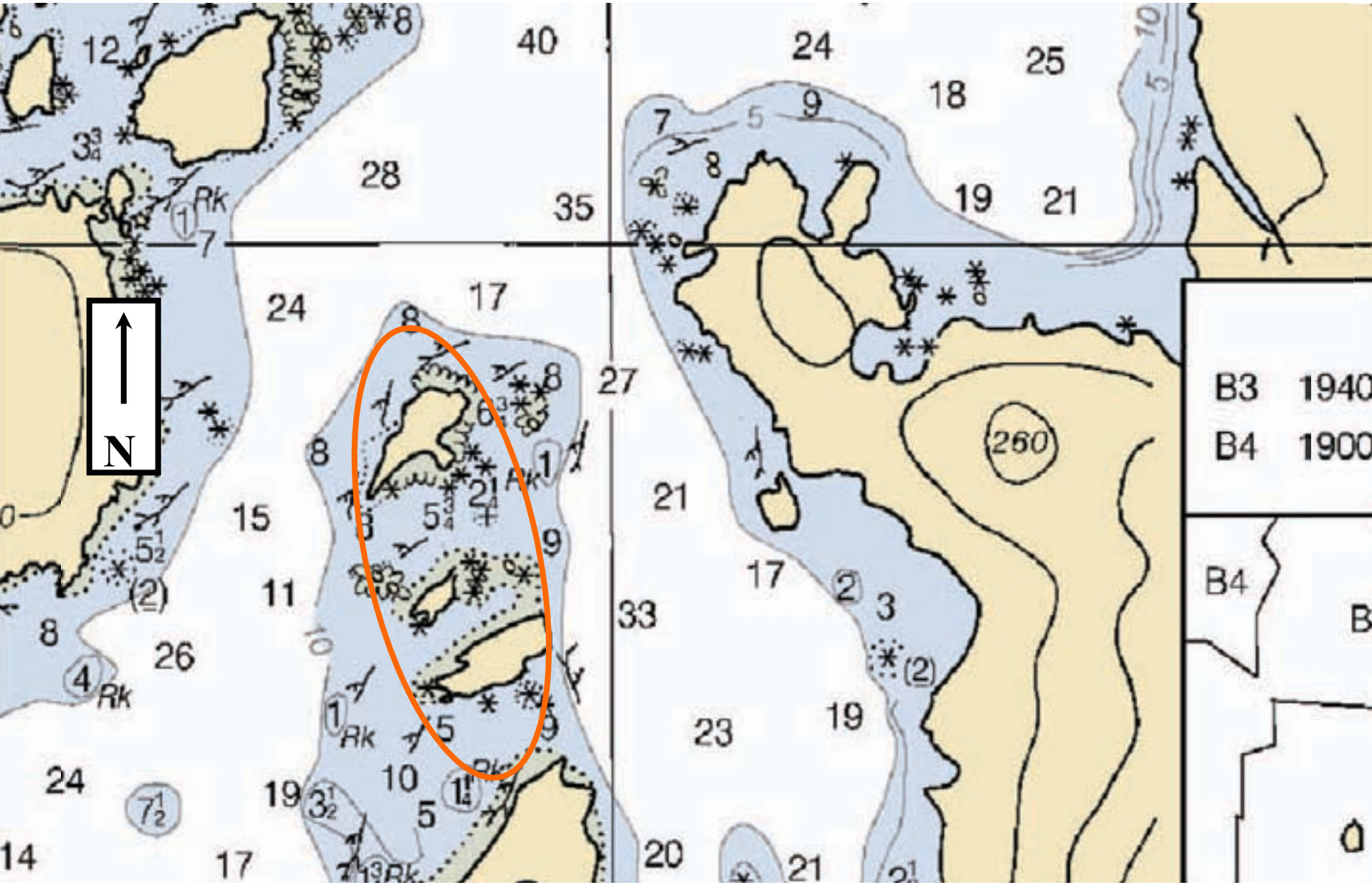
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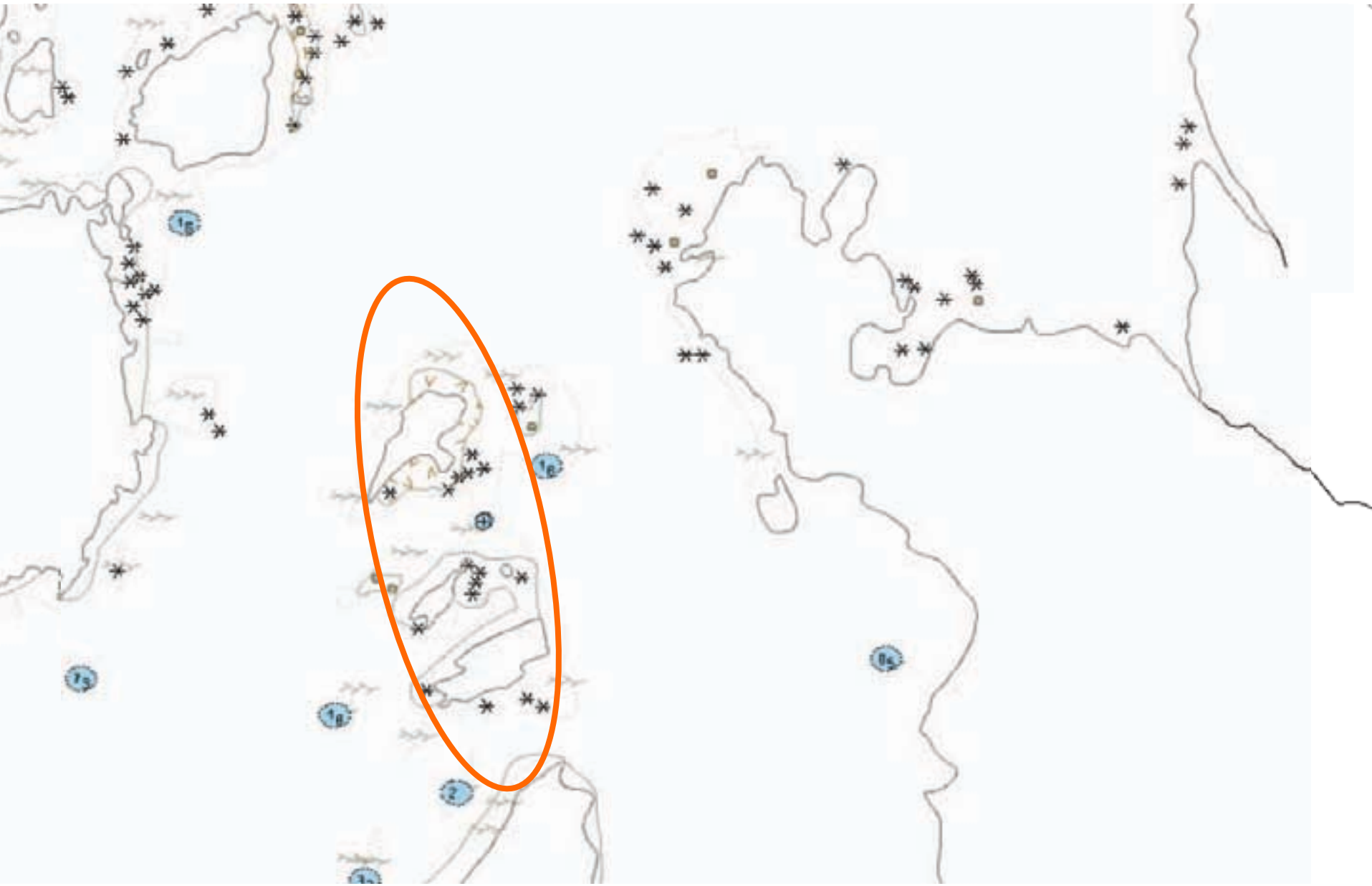


Definitions

For the purposes of this talk…

- "Features" = "Shoreline"
  - Submerged and Exposed items within water area (wrecks, rocks, obstructions, etc.)
  - Water Area Boundaries (MLLW, MHW, piers, etc.)

- "Feature Management"
  - Handling system for Features throughout nautical charting workflow
  - Includes Survey Planning, Data Acquisition and Processing, Documentation, Quality Control and Assurance, Chart Compilation, Customer Delivery, and Archival

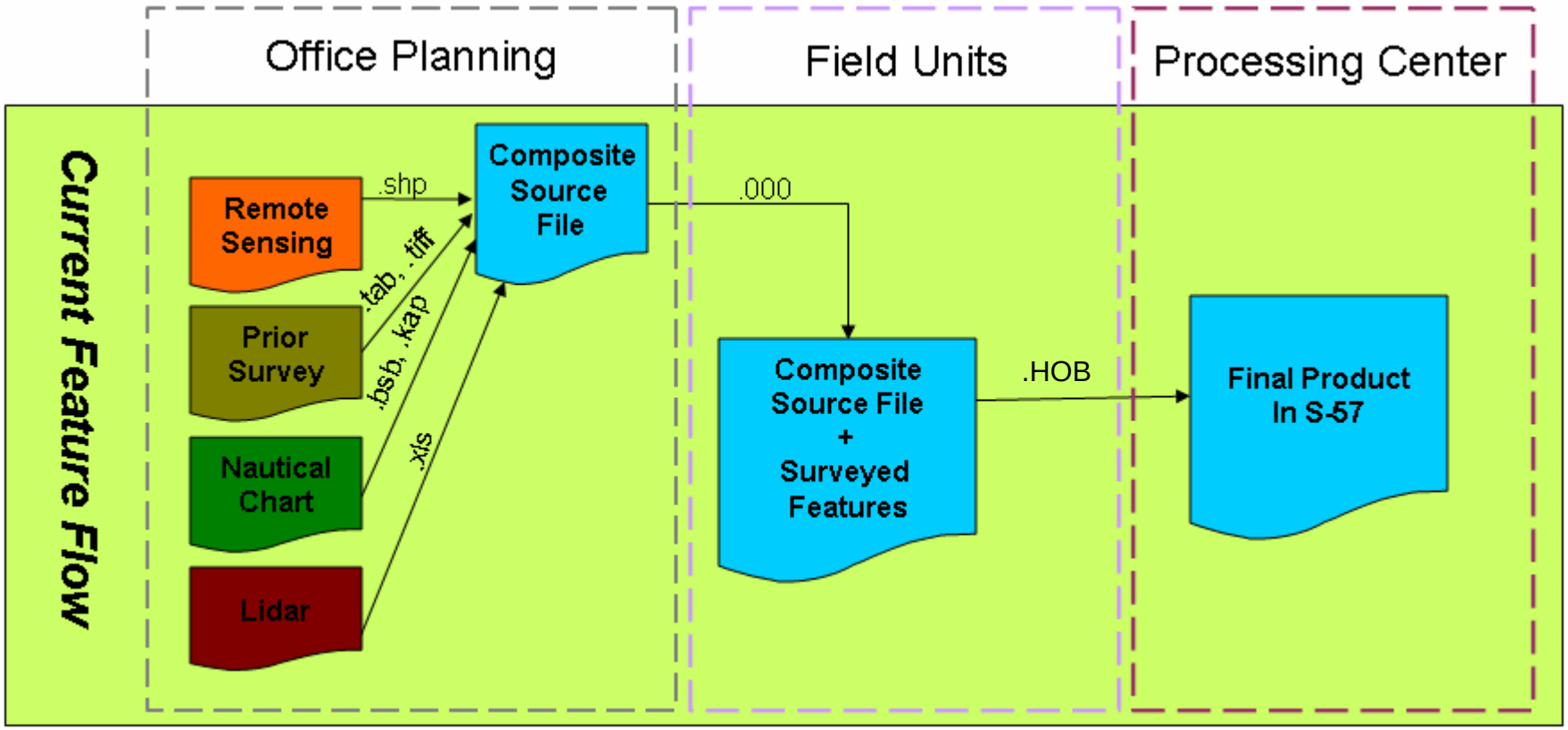
A Brief History

- “Shoreline” has traditionally been the most time consuming element of NOAA hydrography.
- Steady evolution of survey requirements and products.
- Shoreline Tools, Procedures, and Products have not kept pace.
- Fall / Winter 2005 / 2006:
  - RA / FA implemented CARIS Notebook to support ENC Pipeline (replacing shoreline plot)
  - RA requested Composite Source and improved requirements definition.
  - Director, OCS convened “Shoreline Summit”.

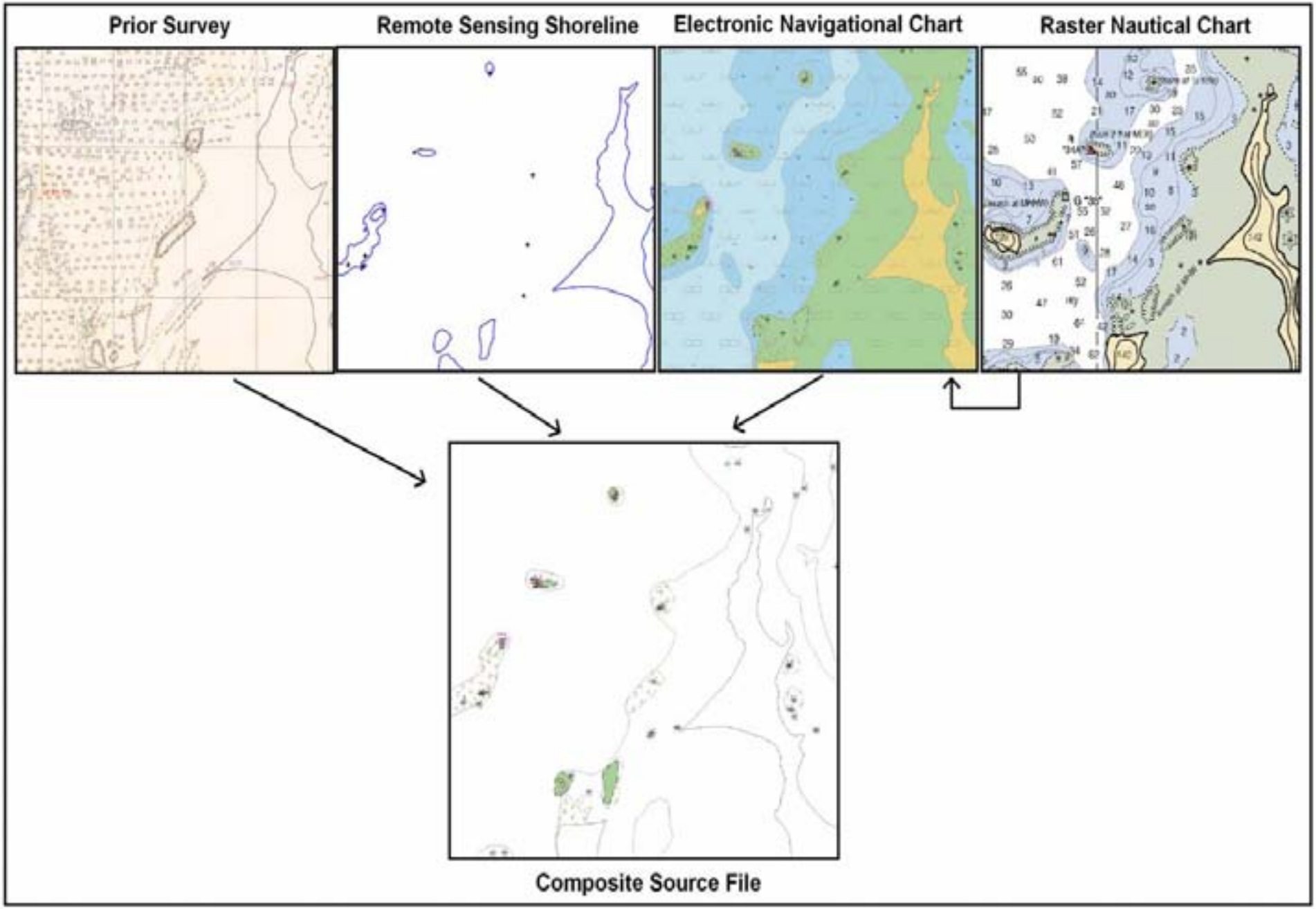
A Brief History (cont)

- Spring / Summer 2006:
  - Feature Management Working Group established
  - Goals focused on streamlining Project Preparation and Data Acquisition processes – 3 year plan.
    - Composite Source
    - Improved requirements definition
    - Improved software environment
  - End State definition tabled – too many “moving parts”.

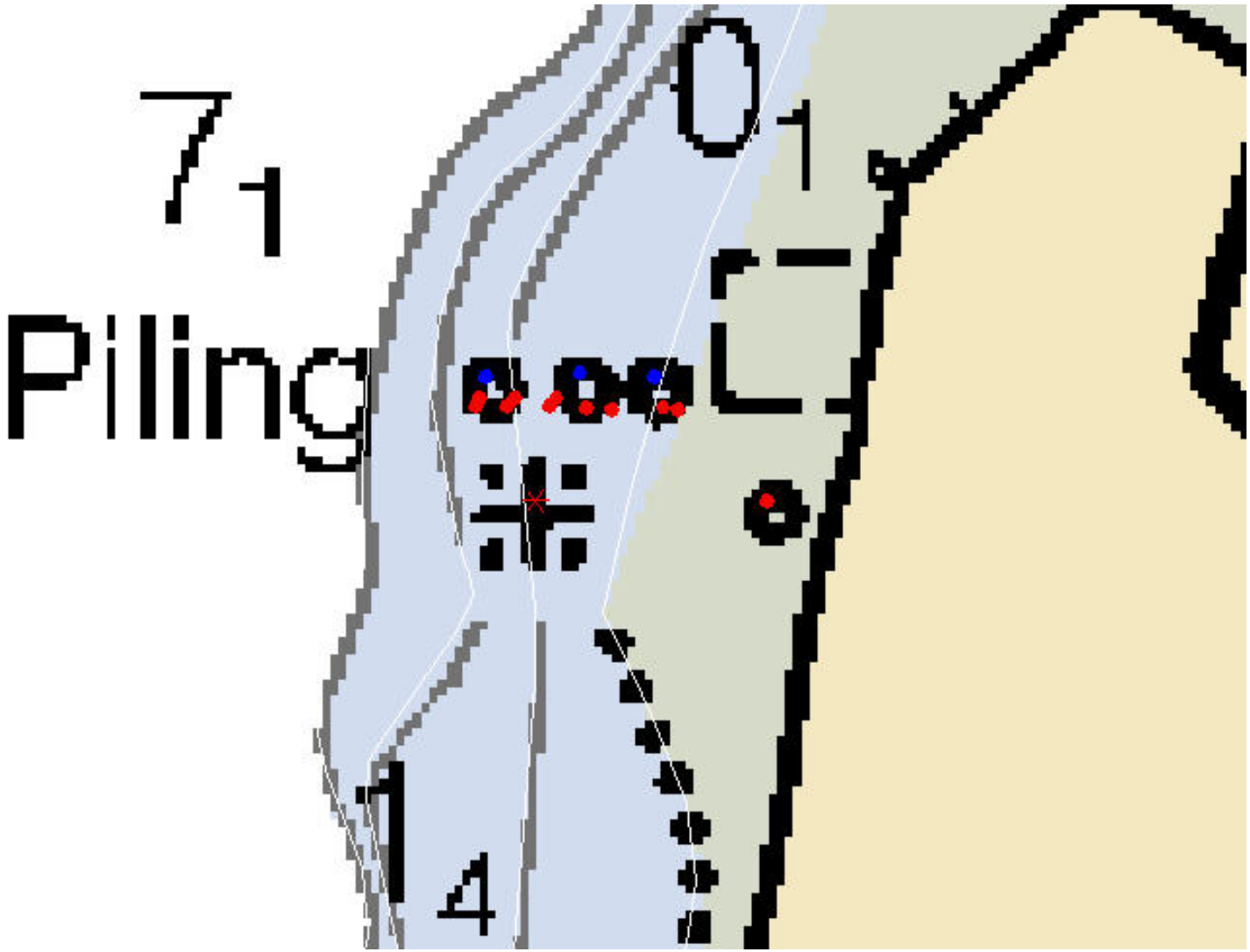
Evolution of Deliverables



Composite Source File Inputs



Boat Sheet Example



A Brief History (cont)

- Significant process improvements achieved or in process:
  - Improved Nearshore Hydrography Guidance
  - Composite Source (implemented 2007)
  - S-57 Encoding Guide (in review)
  - Feature deliverable specification (in review)

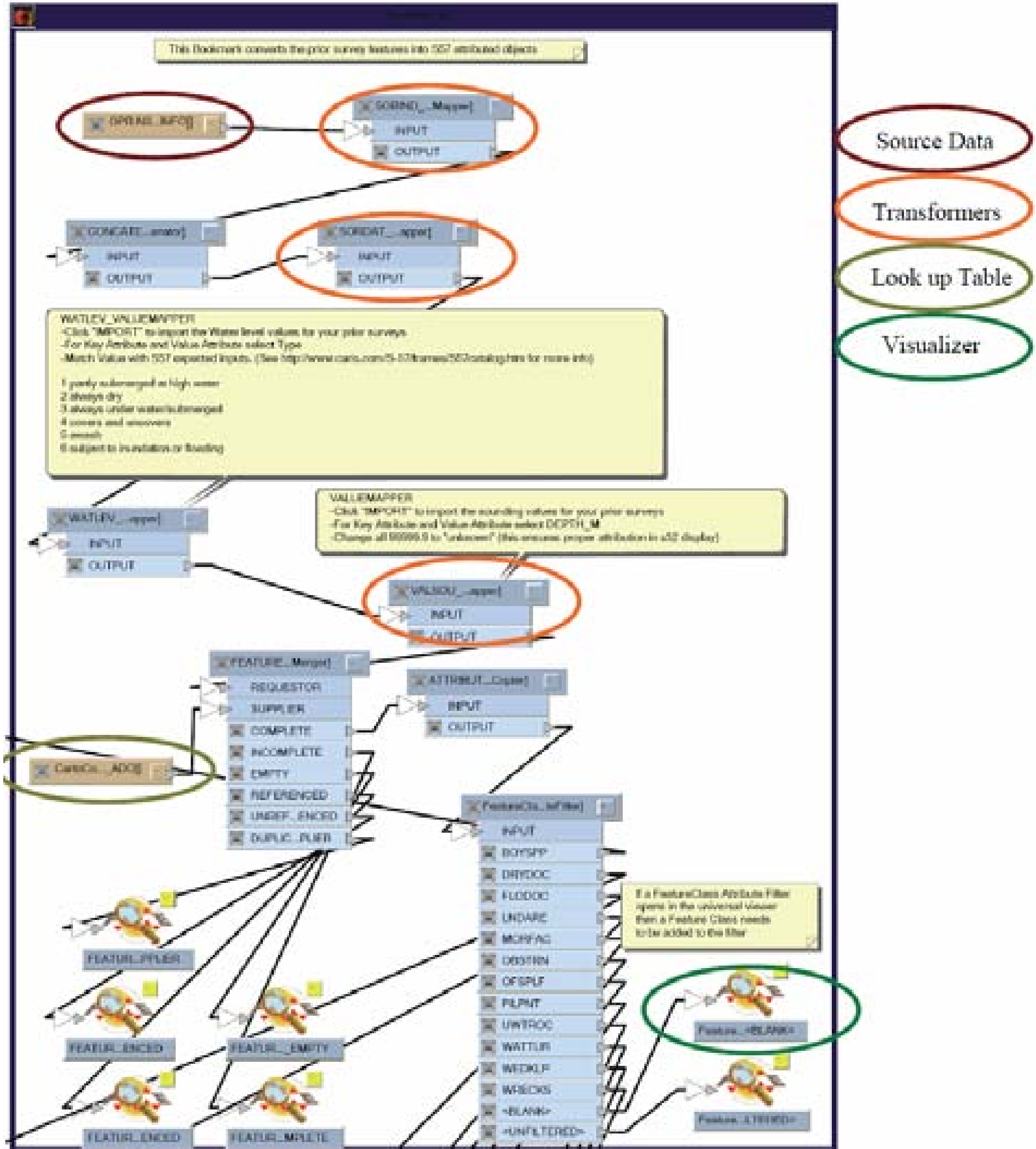
- Results:
  - Streamlined project data flow to field units.
  - Provide consistent deliverables to field.
  - Decreased project preparation time in field.
  - Streamlined nearshore hydrography and feature verification.
  - Reduced operational risk.

Spatial ETL & FME

- Data format conversions
- Data rich transformations
  - Attribution mapped to new format
  - Manipulate attribution to comply with destination format

Why FME

- We wanted COTS solution
- Use of templates to speed CSF creation
- Coast Survey Development Lab was already familiar with FME products (ENCDirect)
- FME and SevenCs collaborated to create a plug-in enabling write capability in S-57 format.
- No programming necessary



This Bookmark converts the prior survey features into S57 attributed objects
INPUT
OUTPUT
WATLEV_VALUEMAPPER
-Click "IMPORT" to import the Water level values for your prior surveys
-For Key Attribute and Value Attribute select Type
1 partly submerged at high water
2 always dry
3 always under water/submerged
4 covers and uncovers
5 awash
6 subject to inundation or flooding
VALUEMAPPER
-Click "IMPORT" to import the sounding values for your prior surveys
-For Key Attribute and Value Attribute select DEPTH_M
REQUESTOR
SUPPLIER
COMPLETE
INCOMPLETE
EMPTY
REFERENCED
BOYSPP
DRYDOC
FLODOC
UNDARE
MORFAC
OBSTRN
OFSPLF
PILPNT
UWTROC
WATTUR
WEDKLP
WRECKS
<BLANK>
<UNFILTERED>
If a FeatureClass Attribute Filter opens in the universal viewer then a Feature Class needs to be added to the filter
Source Data
Transformers
Look up Table
Visualizer


Questions?