



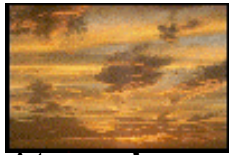
Ocean Environmental Services in M&S

Dr. Joseph B. Collins

Christopher Scannell

Maritime Environment for FBE's

Assemble Archived Data Sources



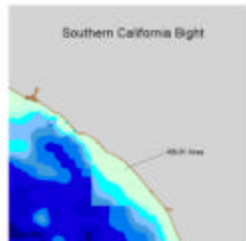
Atmosphere



Ocean



Wave Height



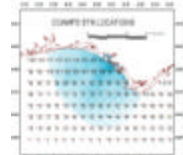
Bathymetry

Months before FBE

Sources: NAVO,
NRL/SSC, MEL

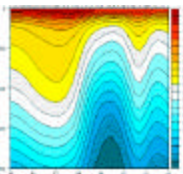
Initialize Model

Assimilate near
Real time data



COAMPS Data

Buoy Data



MODAS and POM
For water column

Weeks before FBE

Sources: NAVO,
NRL/SSC, any

Daily Nowcast/Forecast Process

Creates Data for JSAF Simulation

1000-1200: Receive COAMPS, NPACNFS

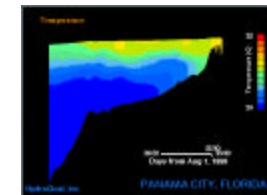
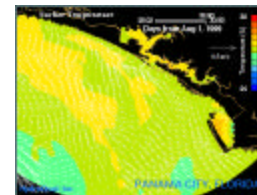
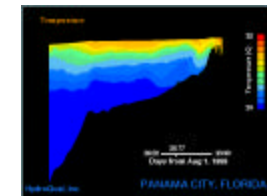
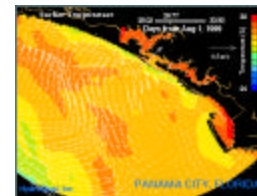
Run ECOM for each Forecast

Compute 48 hours of ECOM data

1500: SERVE Maritime Environment to FBE

Replace prior forecasts with new data

0930: Prepare to repeat process



Daily during FBE

Required Work: Design Methodology,
Modify Server, Enable Simulated Sensors

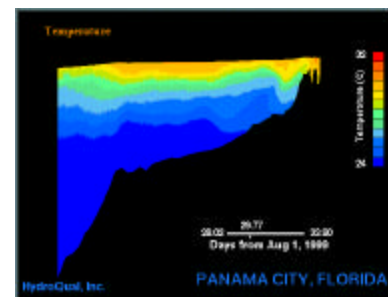
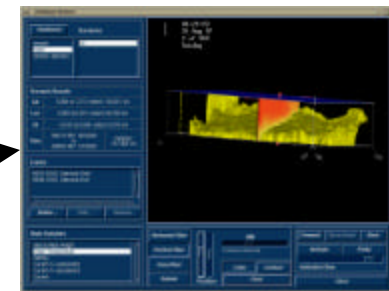
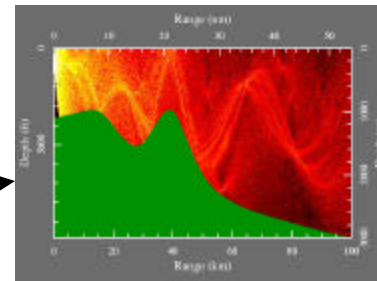
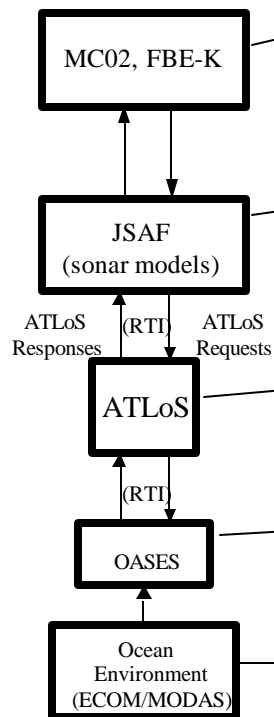
ATLOS and OASES

- ATLOS
 - Acoustic Transmission Loss Server
 - An “Environmental Effects” server
 - Provides reverberation profile also
- OASES
 - Ocean Atmospheric and Space Environment Services
 - Serves METOC data over HLA
 - Transitioning to government ownership
 - Being adapted to Experimentation and Training



ATLoS in Context

Data Flow for Environmental Effects with Acoustic Transmission Loss Server (ATLoS)



Future Directions

- Multi-Resolution grids for METOC
 - Getting data providers to provide
- Widespread use of SEDRIS for METOC
 - Stated interest by developers
- Developing OASES Users Group
- Web Based Services for Environment

SEDRIS Issues

- Conversion required at multiple points
 - Users and distributors will likely lead
 - Content providers likely must follow
- Possibility for content to arrive without interpolation
- METOC requires representation of 3D data
 - Multi-resolution, in space and time
 - Sigma coordinates
 - Orthogonal, curvilinear horizontal coordinates