



NOAA Scientific Computer System



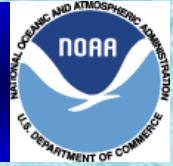
SCS Briefing Workshop on High Resolution Marine Meteorology

March 3, 2003
NMAO Mission Support Division





SCS Development Team Organizational Structure



United States Department of Commerce



National Oceanic and Atmospheric Administration (NOAA)

NOAA Marine & Aviation Operations (NMAO)



Mission Support Division

Systems Development Branch



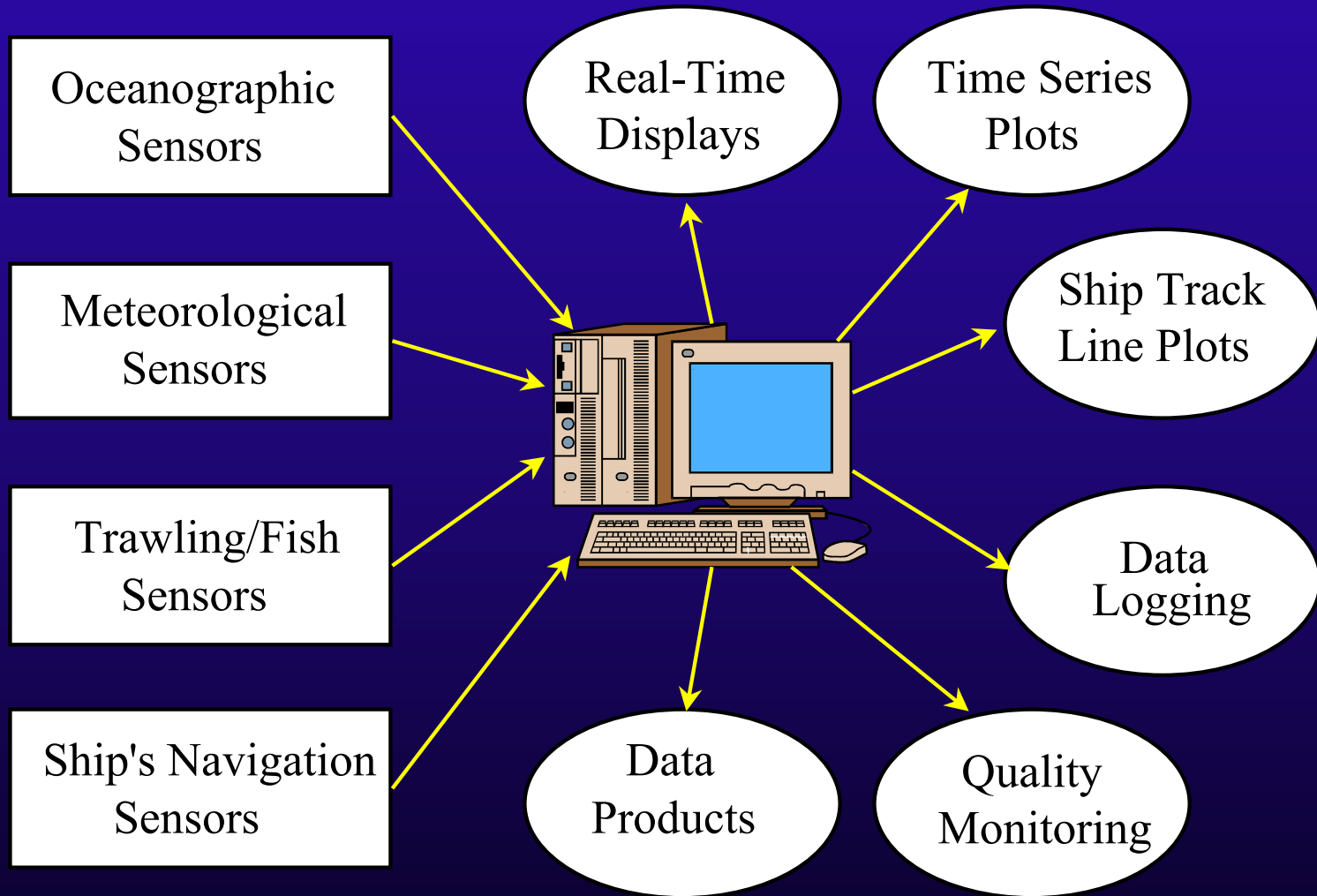
SCS Primary Functions



- Acquire real time sensor data
- Log raw data to disk
- Monitor incoming data for errors
- Display real time data in text and graphical formats
- User-configurable Event Logs
- Serial data output to remote PCs
- QA Post Processing of ASCII data set
- End of cruise data products

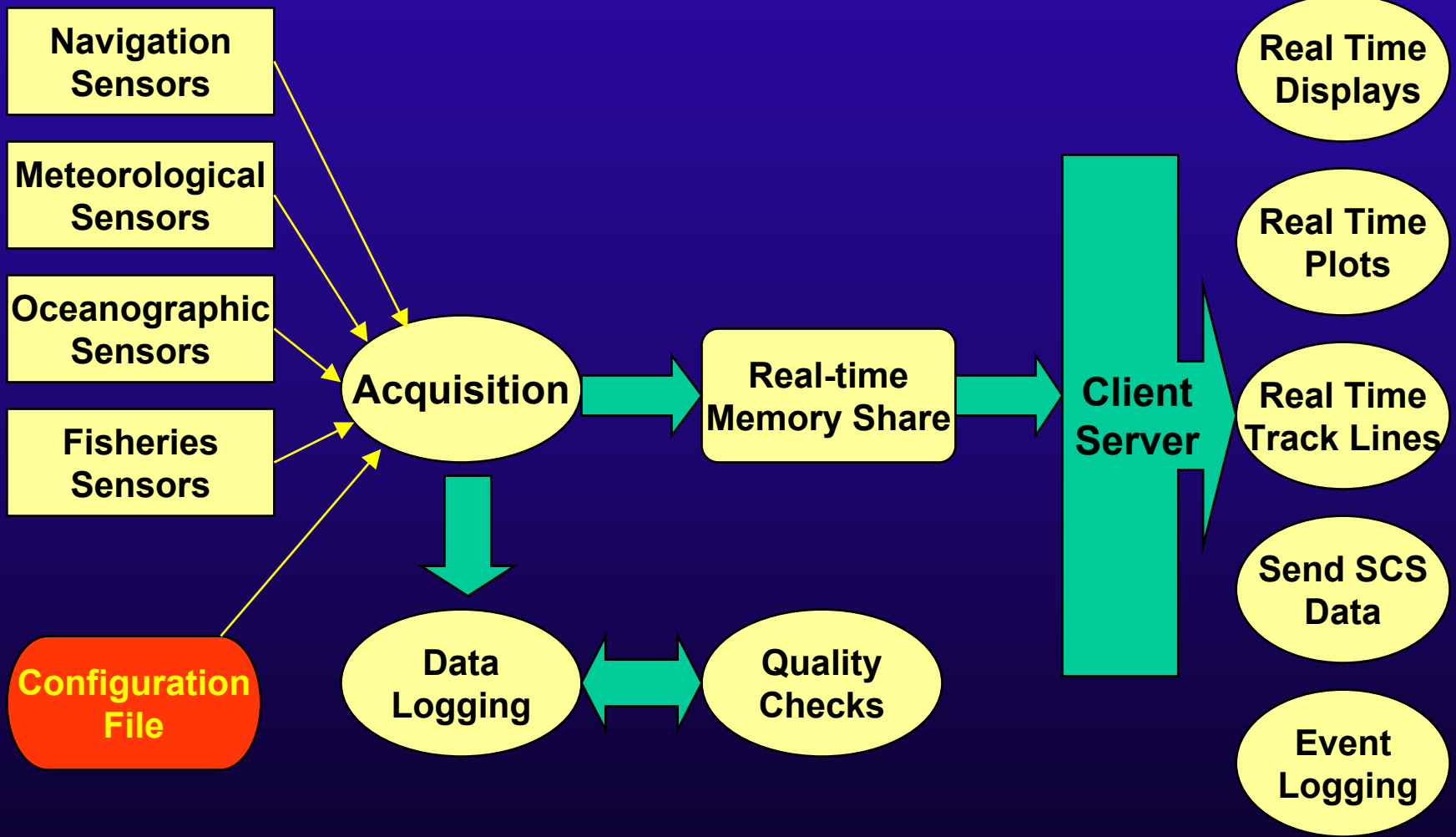
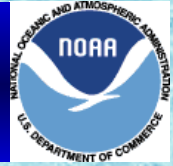


SCS Overview





SCS Data Flow





ACQ/Logger/SCS Data Server



Acq Is Running !!!!!!!

Data Acquisition Start Time:

ACQ Message Window

```
Ocean Section Mapped address 24051712
Acq Configured For 35 Sensors
Serial Sensor Simulation Not supported for Id 17
Serial Sensor Simulation Not supported for Id 20
Log File S:/DataLog/GPS1-GGA_20000113-152627.RAW Created
Aco File S:/DataLog/compress/GPS1-GGA.ACO Created
Lab File S:/DataLog/compress/GPS1-GGA.LAB Created
Log File S:/DataLog/GPS1-MX200-VTG_20000113-152627.RAW Created
Aco File S:/DataLog/compress/GPS1-MX200-VTG.ACO Created
Lab File S:/DataLog/compress/GPS1-MX200-VTG.LAB Created
Log File S:/DataLog/gps2-gga_20000113-152627.RAW Created
Log File S:/DataLog/IIMDA-MET_20000113-152627.RAW Created
Aco File S:/DataLog/compress/IIMDA-MET.ACO Created
Lab File S:/DataLog/compress/IIMDA-MET.LAB Created
Log File S:/DataLog/Flurometer_20000113-152627.RAW Created
Log File S:/DataLog/TSG_20000113-152627.RAW Created
Log File S:/DataLog/TSG-Temperature_20000113-152627.RAW Created
Aco File S:/DataLog/compress/TSG-Temperature.ACO Created
Lab File S:/DataLog/compress/TSG-Temperature.LAB Created
```

Logger Monitor & Control

Logging Start Time: Free Disk Space (bytes):

Logger Status Window

Log Files	LogTime	RecSize	TotalBytes
S:/DataLog/GPS1-GGA	1/13 19:20:37	76	380
S:/DataLog/GPS1-MX200-VTG	1/13 19:20:37	61	305
S:/DataLog/gps2-gga	1/13 19:20:44	79	4582
S:/DataLog/IIMDA-MET	1/13 19:20:44	90	5220
S:/DataLog/Flurometer	no data	0	0
S:/DataLog/TSG	no data	0	0
S:/DataLog/TSG-Temperature	no data	0	0
S:/DataLog/TrueWind-speed	1/13 19:20:37	38	190
S:/DataLog/Ship-Notes	no data	0	0
S:/DataLog/DWind-Speed	1/13 19:20:44	33	1914
S:/DataLog/TWS-Avg-Min	1/13 19:20:44	69	4002

Automatic Logger Control

Enable Logging for Auto Stop/Start

Logging Will Stop/Restart At: Hours Minutes Seconds GMT

Manual Control

SCS Data Server

Available Connections:

Connections In Use:

Activity (bytes/sec):

Data Server Messages

```
Scs Server Ready
```



Data Monitoring/QA



- Range Checks
- Delta Checks
- Synch Checks
- Sensor Timeouts

DataMon: 20000113-152627

File View Actions Help

ID	Name	Range	Delta	Sync	Timeout
001	GPS1-GGA			0	1
002	GPS1-TIME	0	0		
003	GPS1-LAT	0	0		
004	GPS1-LON	0	0		
005	GPS1-QUALITY	0	0		
006	GPS1-SATS	0	0		
007	GPS1-HDQPS	0	0		
008	GPS1-MX200-VTG			0	1
009	GPS1-sog:	0	0		
010	GPS1-cog:	0	0		
011	gps2-gga			0	1
012	Gps2-time	0	0		
013	Gps2-lat	0	0		
014	gps2-lon	0	0		
015	IIMDA-MET			0	1
016	WINDSPEED	0	0		



Real Time Displays/Gauges



- Provides basic visualization of real-time data
- Displays are user-configurable
- Visual indication when data fails to update

gps1.sel - Real Time Display Window

GPS1-TIME (HHMMSS)	153209
GPS1-LAT (DEGMIN)	3329.98305N
GPS1-LON (DEGMIN)	07359.97733W
GPS1-QUALITY (1=GOOD)	03
GPS1-SATS (NUMBER)	002
GPS1-HDOPS (NUMBER)	3.10
GPS1-sog: (Knots)	3.90
GPS1-cog: (Degrees)	117.59

Turn Off Error Checking

COG.gag

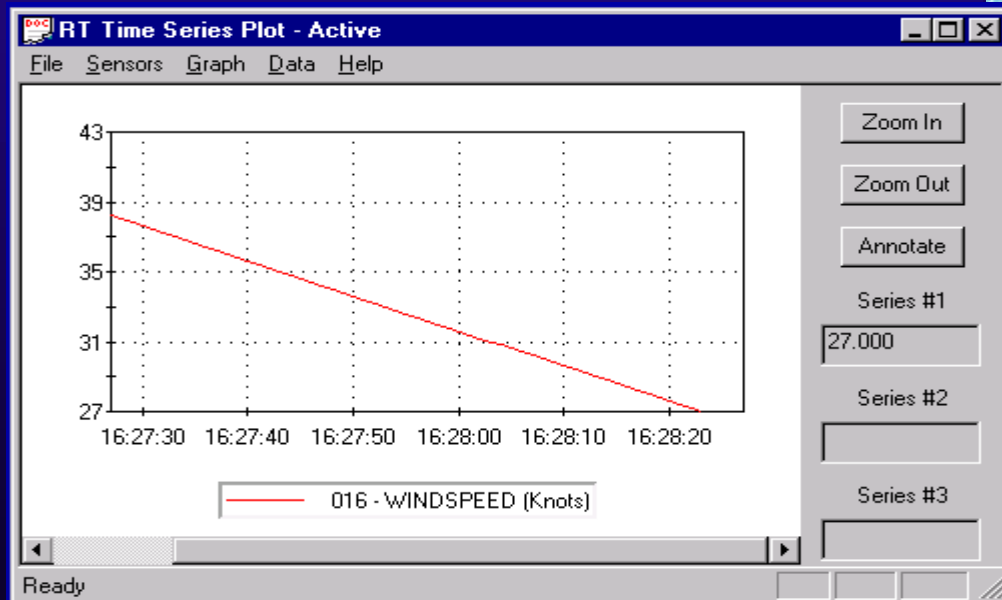
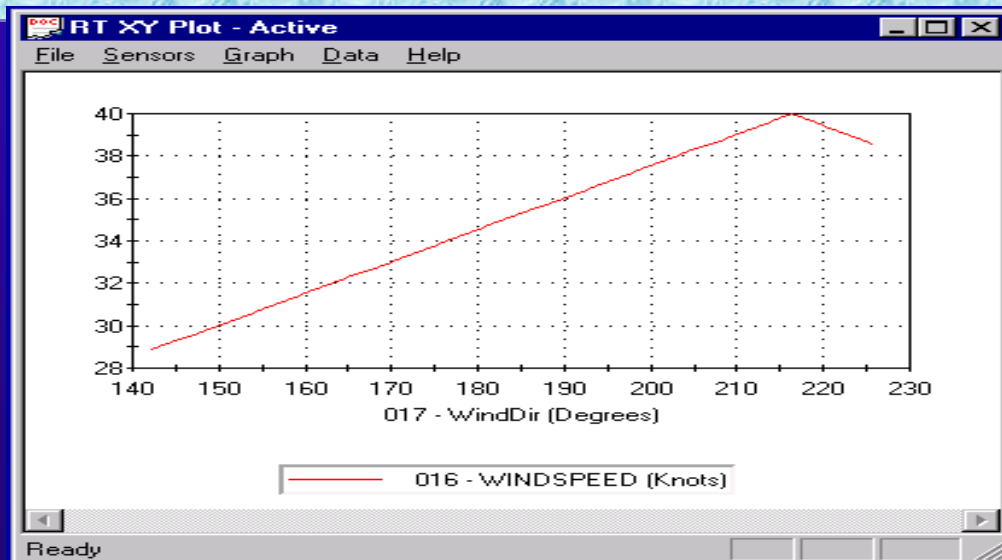
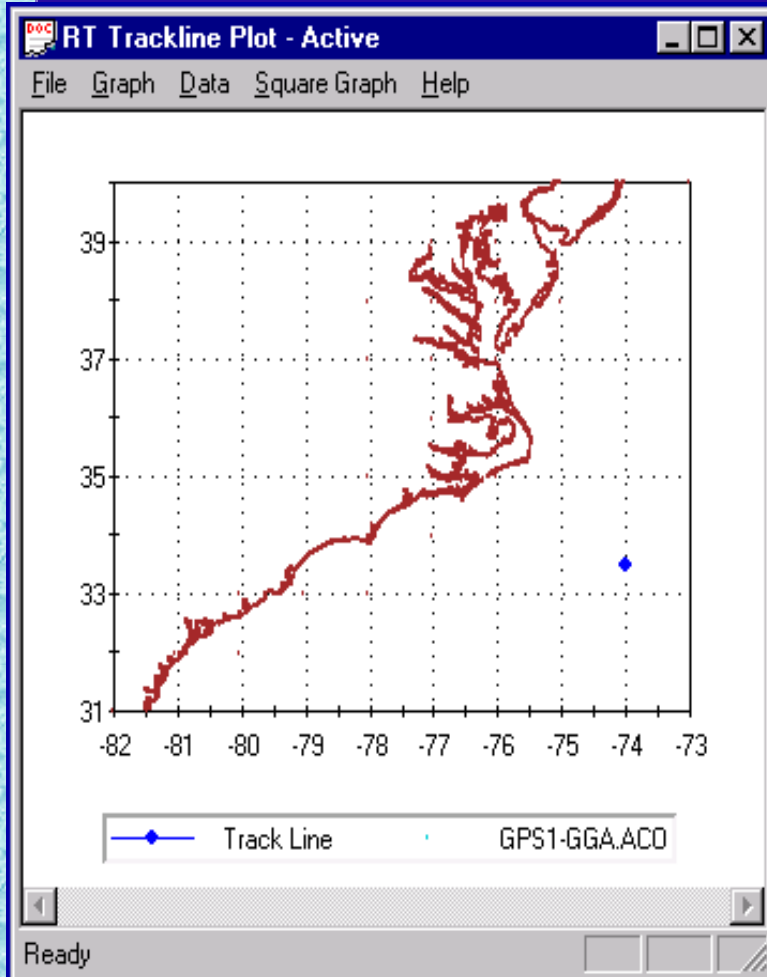
File Gauge Help

159.89

GPS1-cog: in Degrees



Real Time Graphical Displays

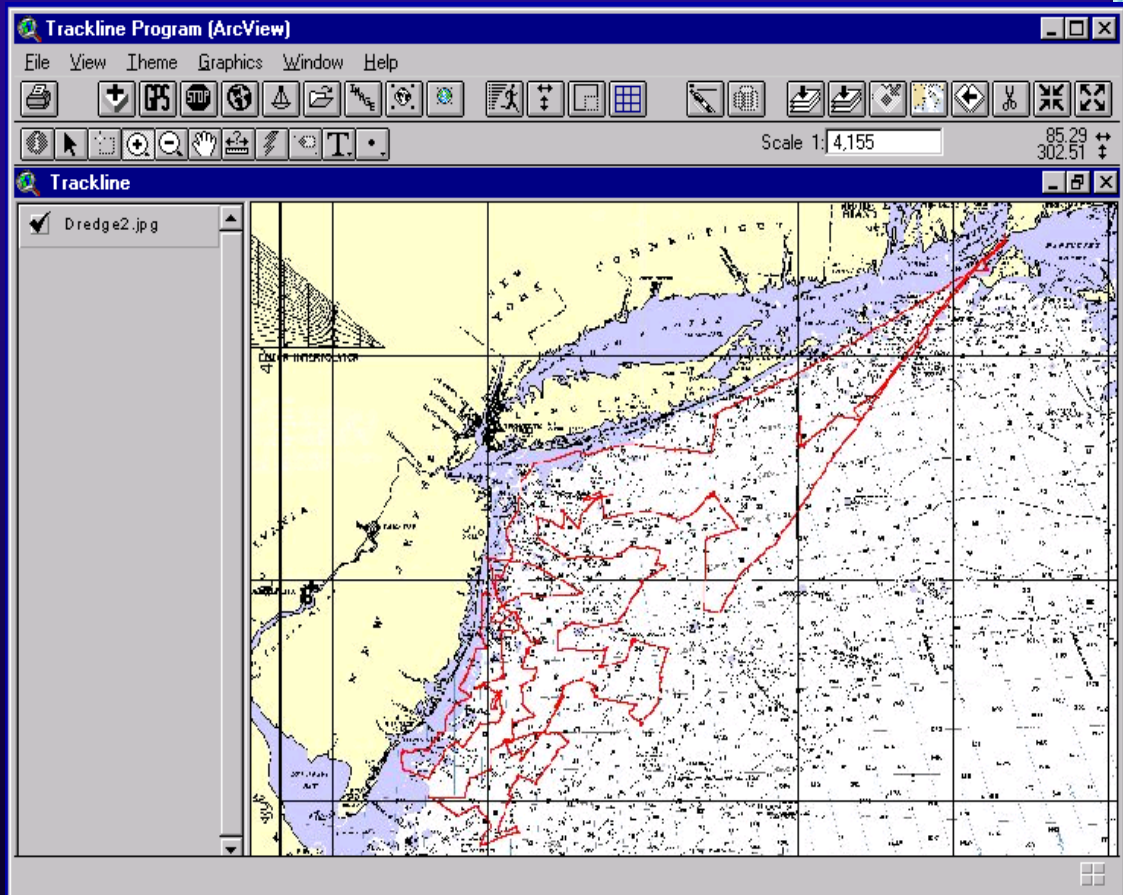




GIS Functionality



- Ship's Track Line
- Coastlines (Digital Chart of the World)
- NOAA Nautical Charts
- Satellite Images
- Contour Data
- Stations/
Waypoints





Event Logger



- Provides scientists with personalized/ customized data logging
- Allows metadata to be associated with each event (i.e. vessel, cruise#, etc...)
- Event buttons provide for annotation while the event is running
- Several events can be run simultaneously
- Events can be configured to start automatically (i.e. at a specific time or when at or around a lat/long waypoint)



SCS Data Mailer



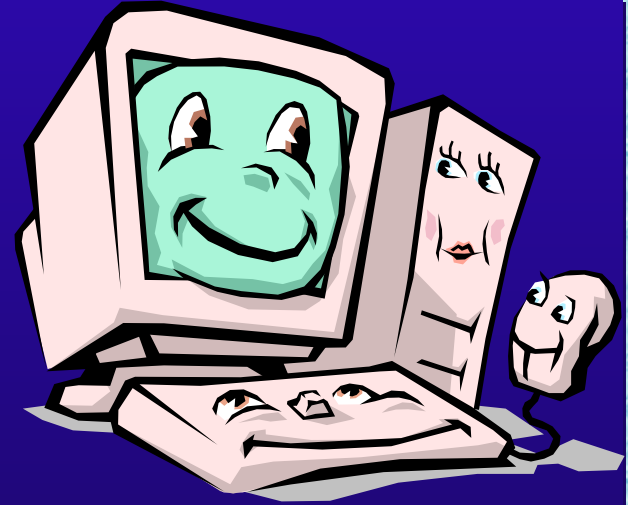
- Automatically Send SCS data Snap Shots
- Creates SCS Data Mail Messages periodically
- Integrates with Sendmail Switch for delivery
- Flexible Sensor Configuration
- Utilized in NOAA ShipTracker Web Site
 - Ships Trackline displayed in Web Map
 - Current Conditions
 - History of conditions
 - Home Land Security Issues Being Addressed



Overall SCS Advantages

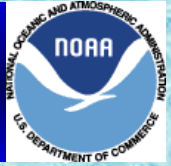


- Simple to use
- Easy to manage
- Fast and easy to configure
- Stability (in use for > 4 yrs)
- Easy user-access to data
- Standard data end products (i.e. CD-ROM, floppy, ZIP, JAZ, etc...)
- Can be configured to use on any vessel without the need for new software modules





NOAA Vessels with SCS



- MILLER FREEMAN Fisheries (NE Pacific/Alaska)
- DAVID STAR JORDAN Fisheries and Oceanography (West Coast / Tropical Pacific)
- OSCAR SETTE Fisheries Mid-Pacific (Hawaiian Chain)
- MCARTHUR Fisheries and Oceanography (West Coast, U.S.)
- KA'IMI MOANA Oceanography (Whole Pacific)
- RONALD H. BROWN Oceanography (World's Oceans)
- ALBATROSS IV Fisheries (East Coast, U.S.)
- DELAWARE II Fisheries (East Coast, U.S.)
- NANCY FOSTER Oceanography (East Coast, U.S.)
- OREGON II Fisheries (Gulf of Mexico/SE U.S)
- GORDON GUNTER Fisheries (Gulf of Mexico/SE U.S.)



Partnership Efforts



- Brookhaven National Labs
 - Japanese R/V Mirai
 - CO2 land-based experiments
- International SeaKeepers Society
- Skidaway Institute of Oceanography
- British Antarctic Survey
- UNOLS
- US Coast Guard
- Canadian Coast Guard
- National Oceanographic Data Center (NODC)





Future SCS Developments



- Web display/graphics
- Acquisition of TCP/IP Sensors
- Enhanced EventLogging Capability
- Enhanced GIS capabilities
- .NET/C# development
- Data Access DLL for user programming
- Improved sensor history and metadata tracking

