



# Web-ATCF, User Requirements and Intensity Consensus



## Presenters

**Buck Sampson (NRL Monterey) and Chris Sisko (NHC)**

## Contributors

**Ann Schrader (SAIC)**

**Chris Lauer, Alison Krautkramer, James Franklin (NHC)**

**Ethan Gibney (NOS/CSC)**

**IHC 2008**

**Charleston, South Carolina**



# Overview



- 1. Web-ATCF (JHT project, 20% complete)**
- 2. User Requirements (JHT, 50% complete)**
- 3. Intensity Consensus (JHT, 50% complete)**
- 4. Product and Service Development (NHC)**



# 1. Web-ATCF

## **-Client will**

- be 1MB executable**
- written in C++**
- work for Windows and Linux**
- launch from web page**

## **-Communication will**

- be https (secure) protocol**
- work through most firewalls**

## **-ATCF will work still work in w/s configuration**

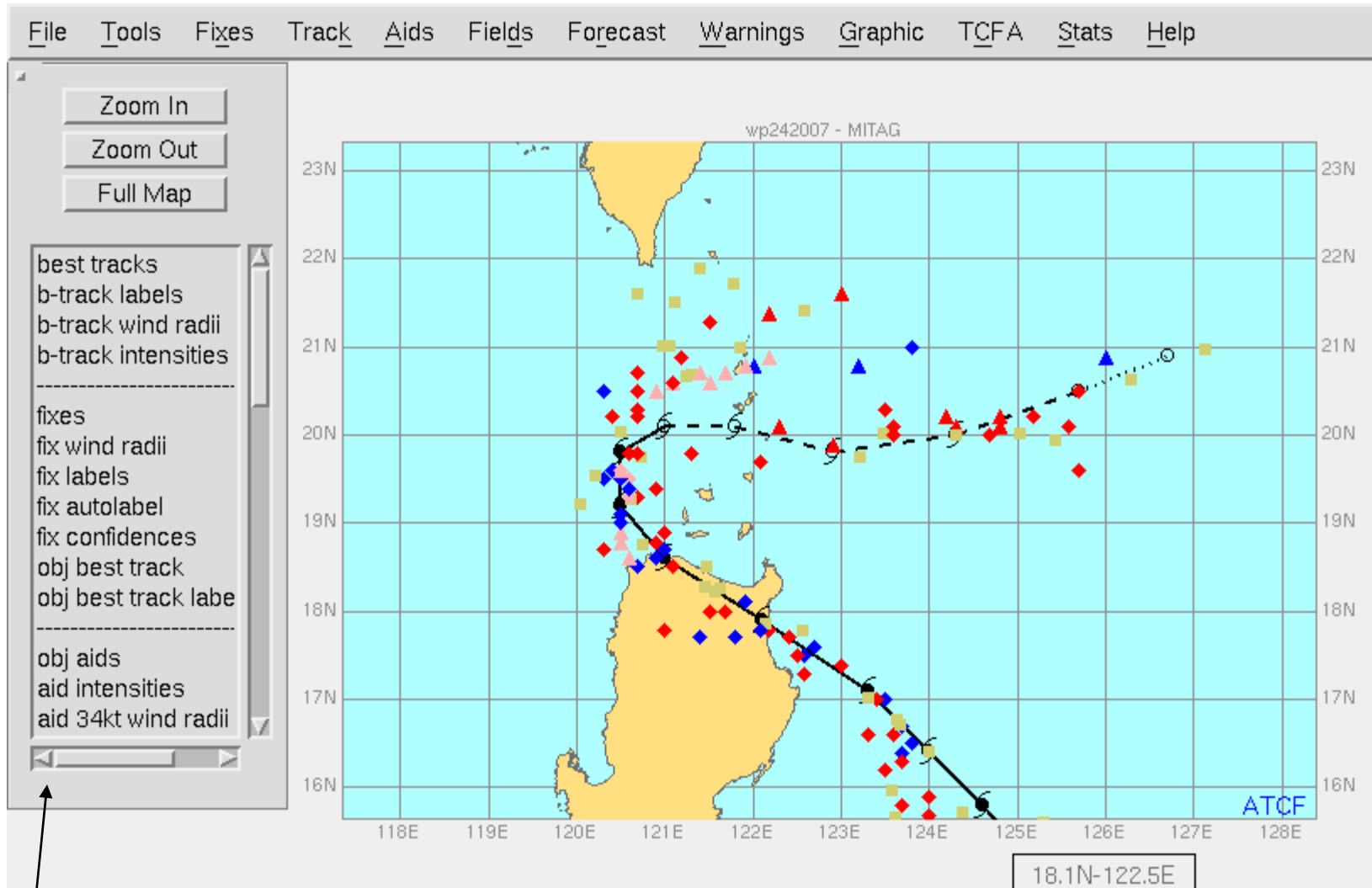


## 2. User Requirements

- **Approximately 30 requirements addressed**
- **Highlights**
  - **Mouse-over Information**
  - **Sidebar**
  - **Run Your Own Consensus dialog**



# ATCF Sidebar



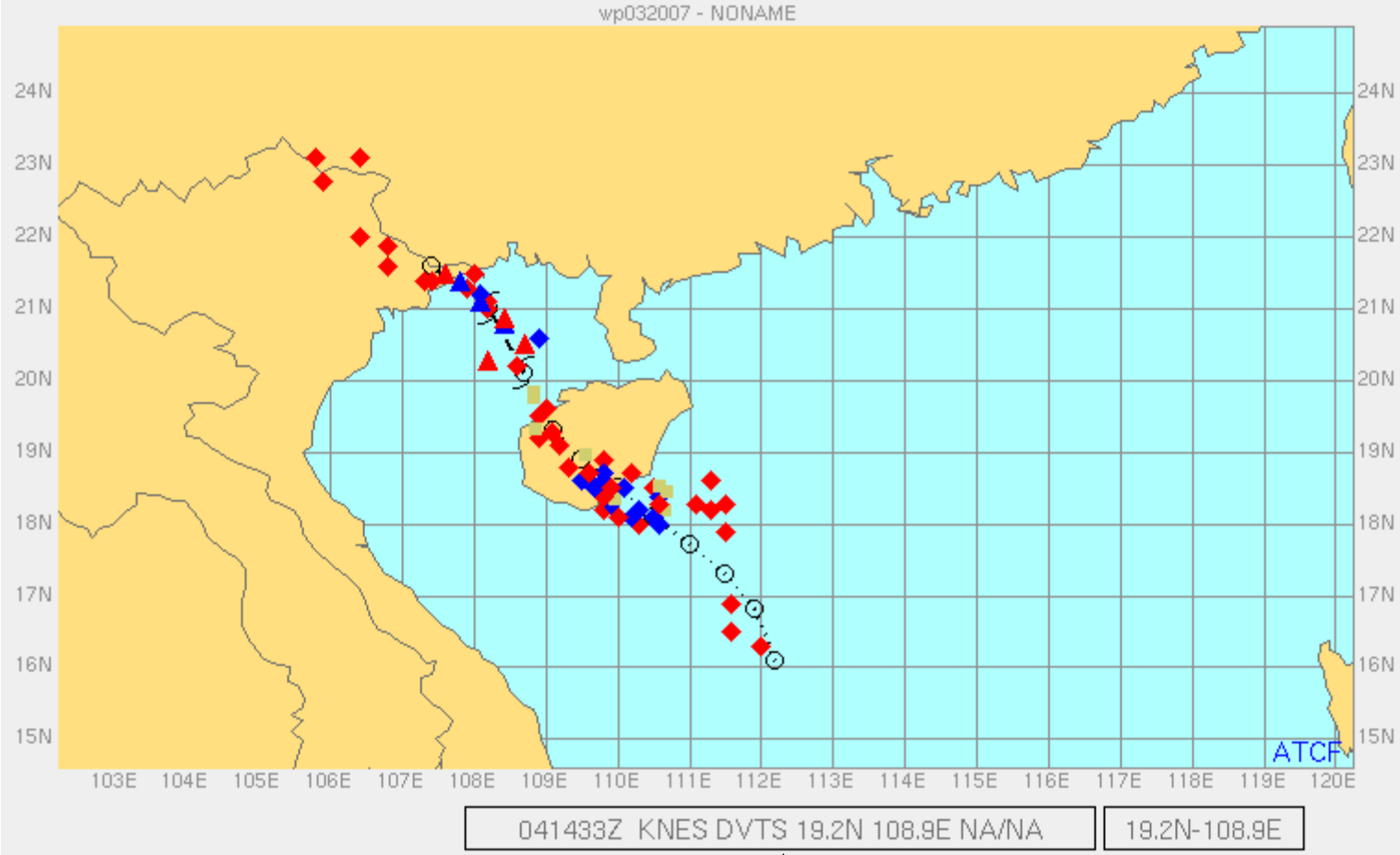
This sidebar menu allows quick display or removal of fields, aids, fixes, labels. Ideal for a web application, but also has merit in the current ATCF.



# Mouse-over Information



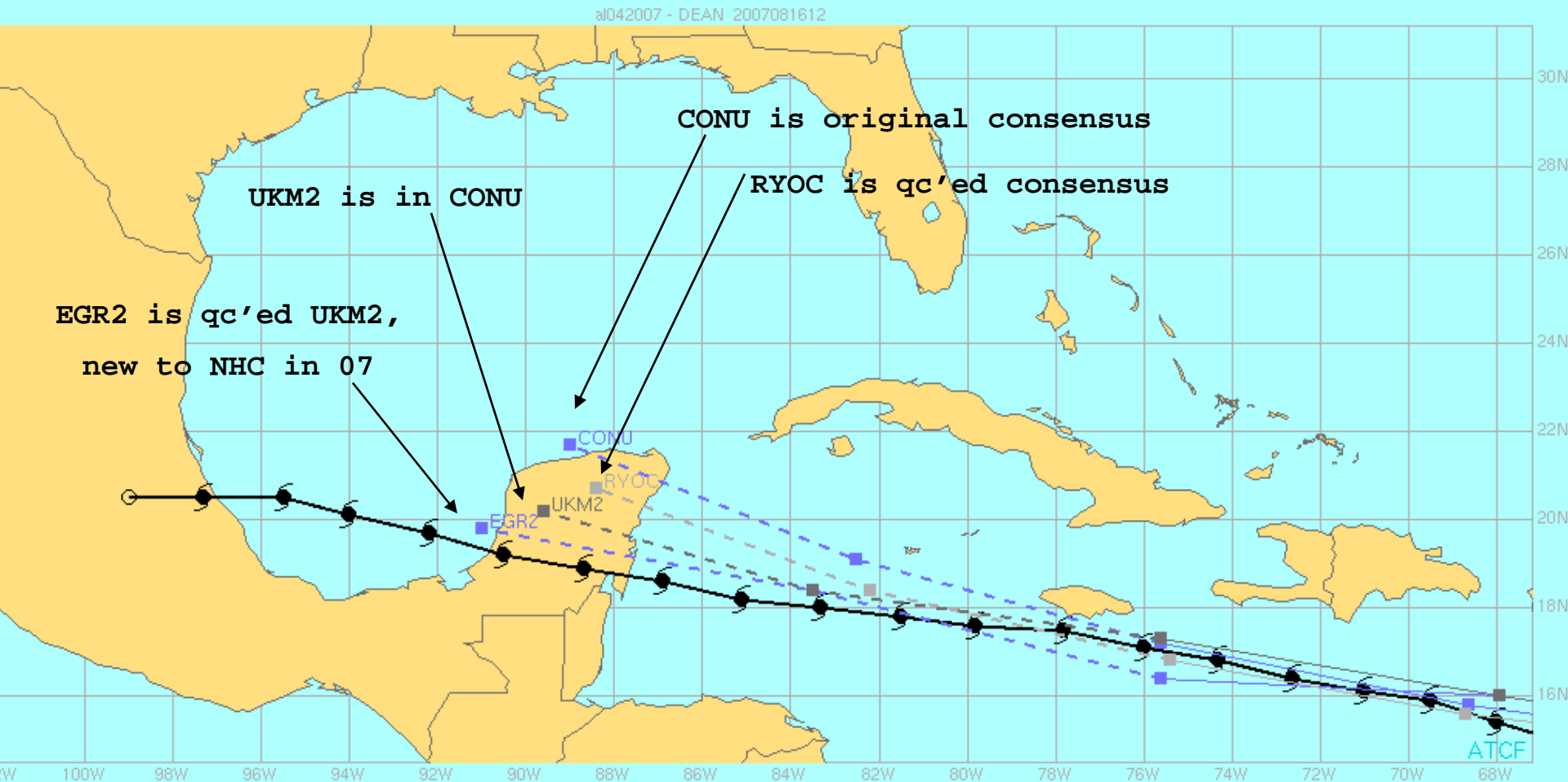
[File](#) [Tools](#) [Fixes](#) [Track](#) [Aids](#) [Fields](#) [Forecast](#) [Warnings](#) [Graphic](#) [TCFA](#) [Stats](#) [Help](#)



Click on a fix to get an instant display of the fix metadata. Also implemented for the best track, objective best track, objective aids and forecast.



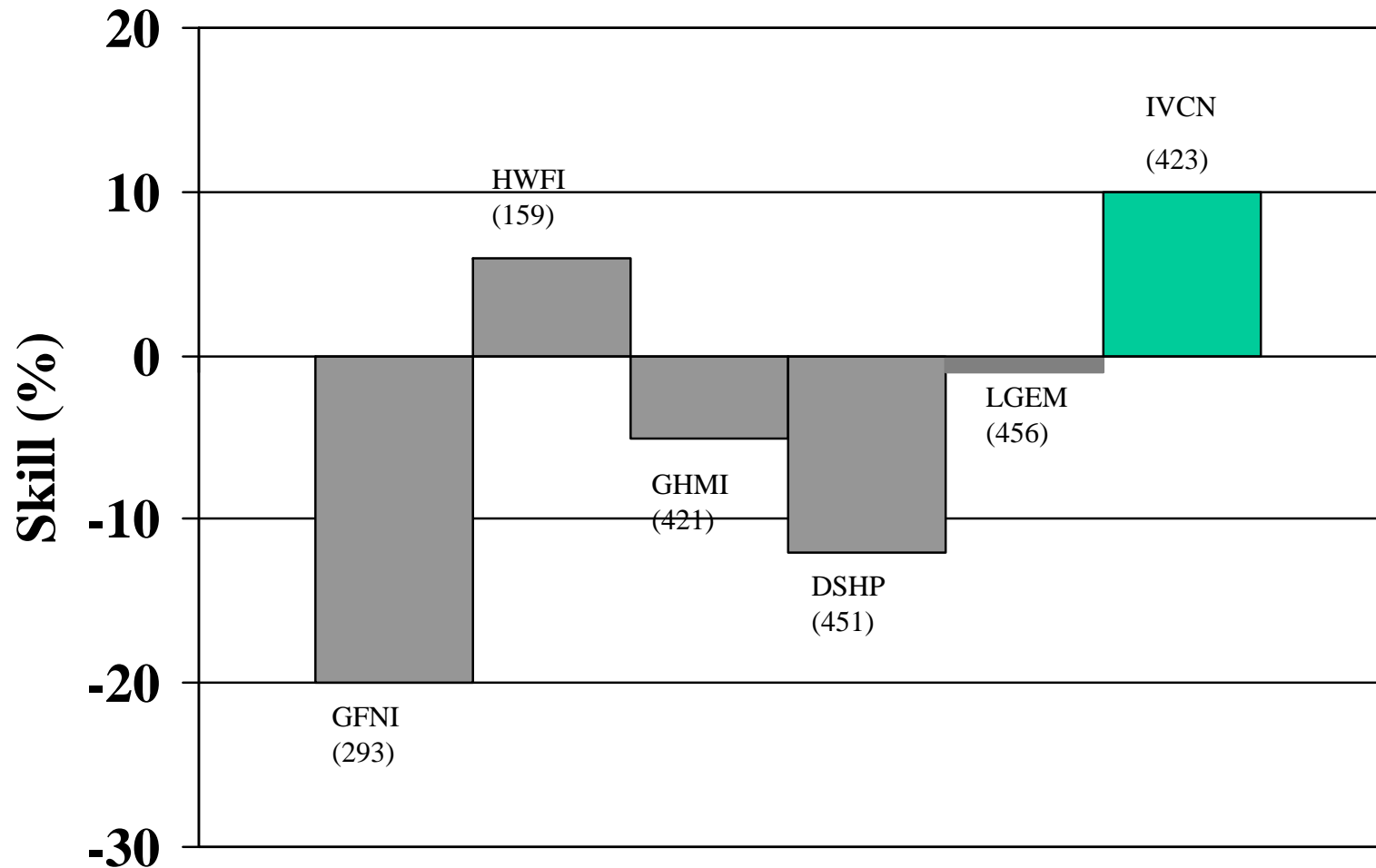
# Run Your Own Consensus (RYOC)



Ability to construct consensus on the fly. Used for 12% of all advisories in 2007 (45 and 12 cases at 12 and 120 h). HWRF and ECMWF frequent additions to consensus.



# Intensity Consensus



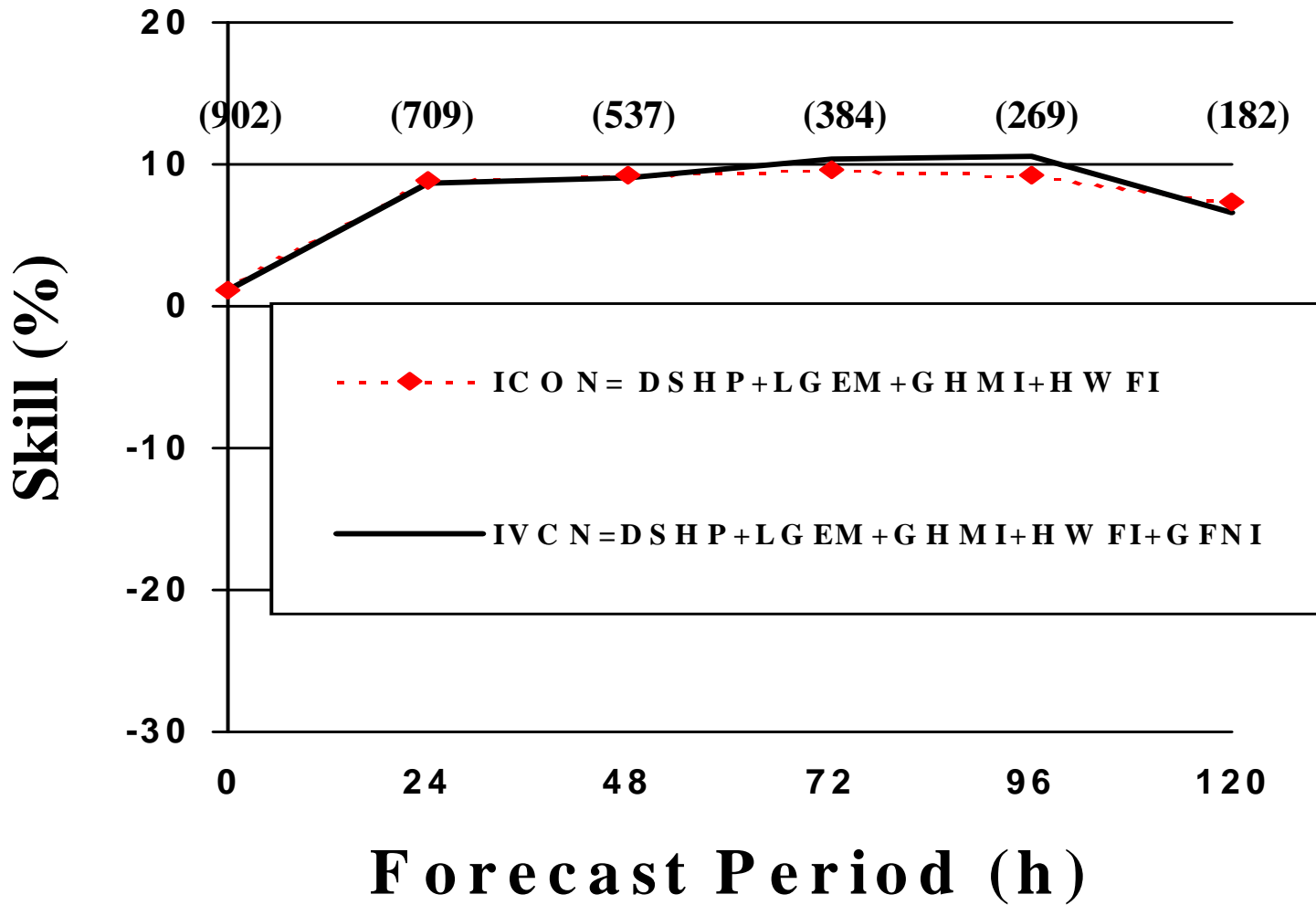
72-h Forecast (AL and EP 2006-2007)

Five top-performing intensity models and five-model consensus (IVCN). The consensus generally outperforms individual models. IVCN and a four-model consensus (ICON=ICVN-GFNI) will be run this season.





# Intensity Consensus Skill



Performance of ICON and IVCN for AL and EP 2006-2007 is about the same. ICON requires all four models be available to compute it (~87% availability) while IVCN requires only two be available (~100% availability). Forecasters prefer ICON.

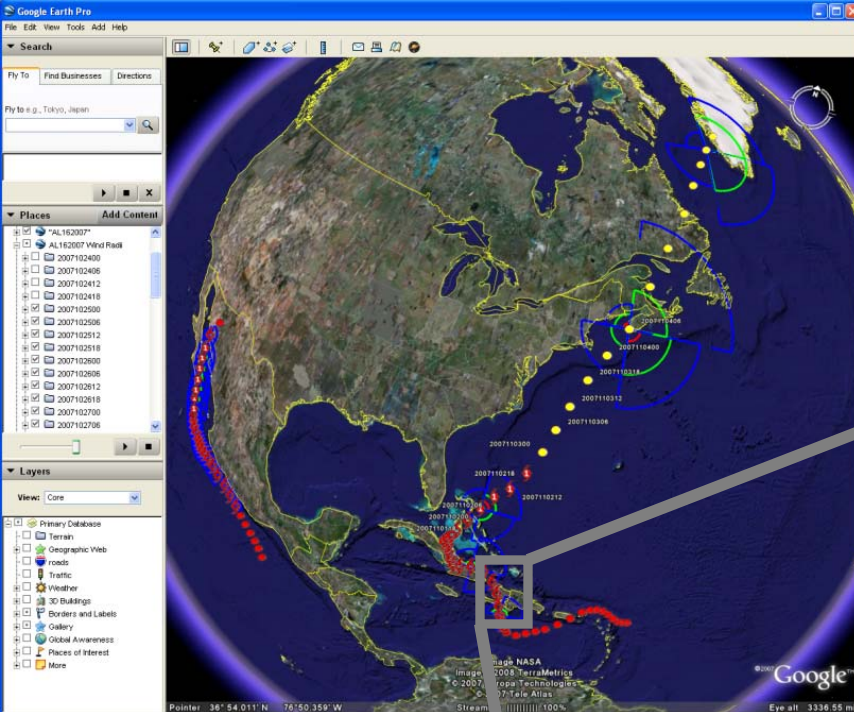


# NWS / NOAA: Near Future



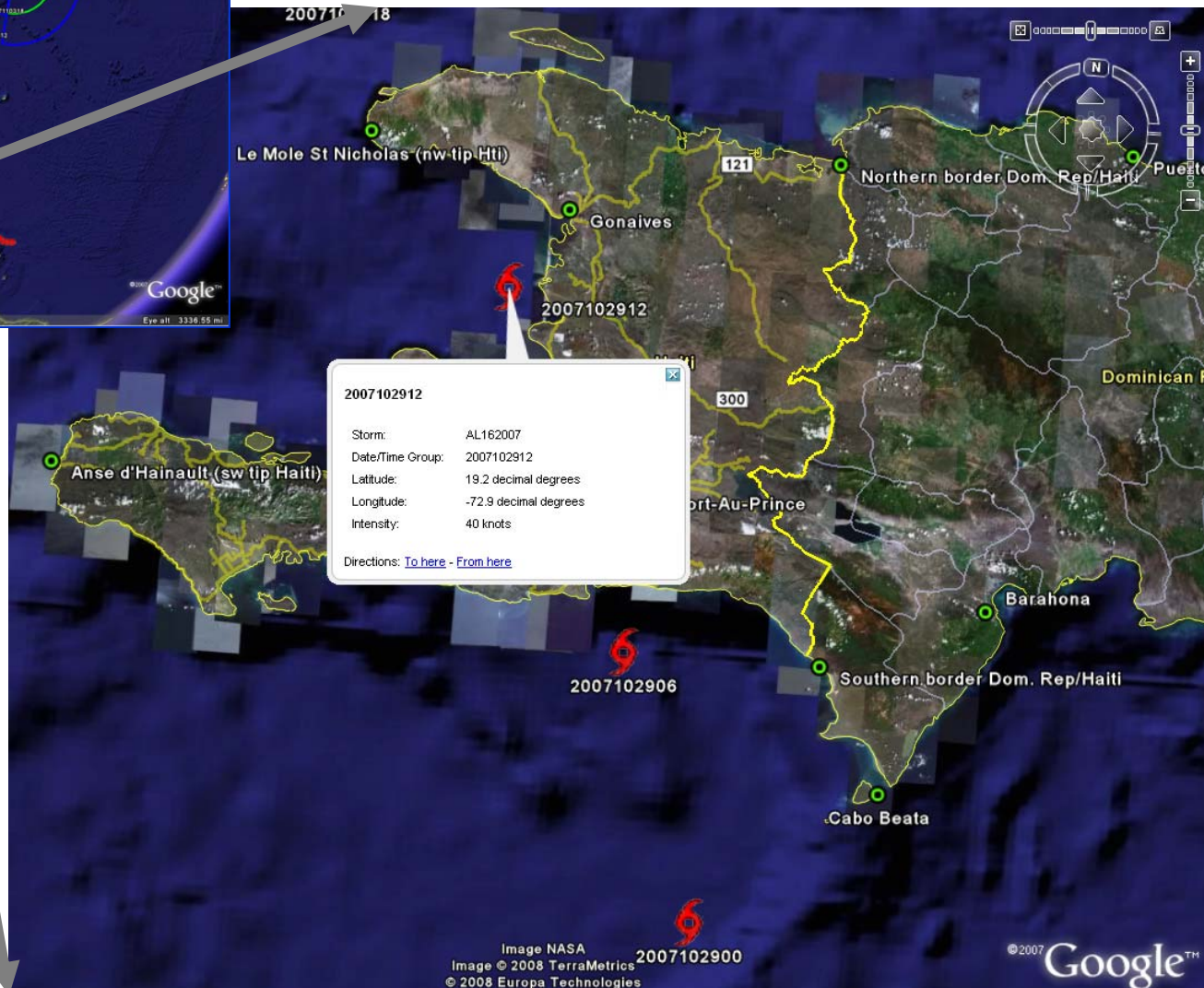
- **Spin up WEB version ATCF (prototype)** – external users within NCEP, NWS and DOD (after Operational T&E).
- **Product Rollouts** - as developed, refined and tested.
  - **Kml / Kmz files** (Google Earth / Maps)
  - **GIS Shapefiles** (ArcGIS, MapInfo, etc)
  - **XML** – proposal for WMO sponsored TC format.

**“Leverage the ATCF Databases – the direct source.”**



# Google Earth

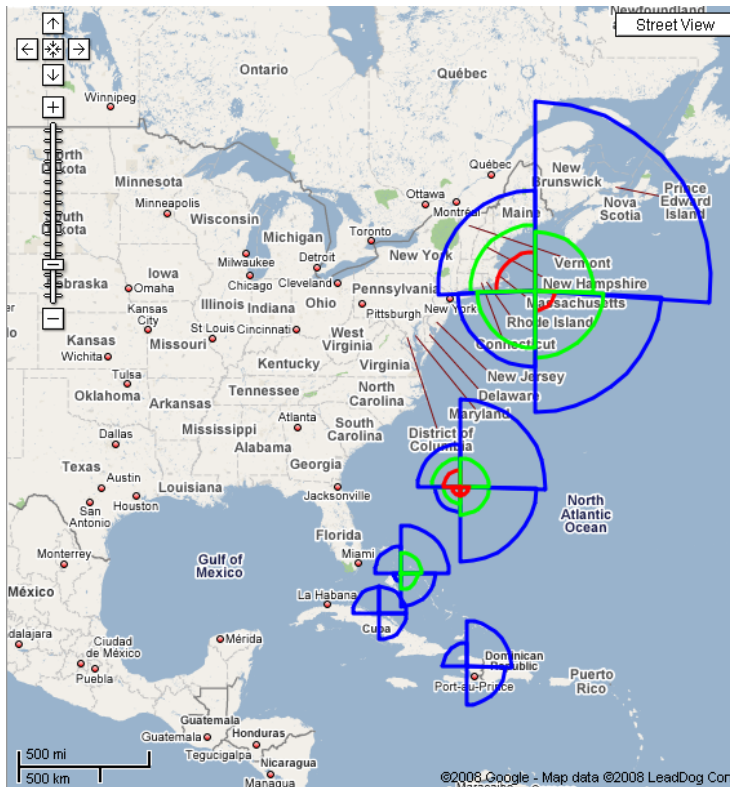
## “Prototype of Best Track information”



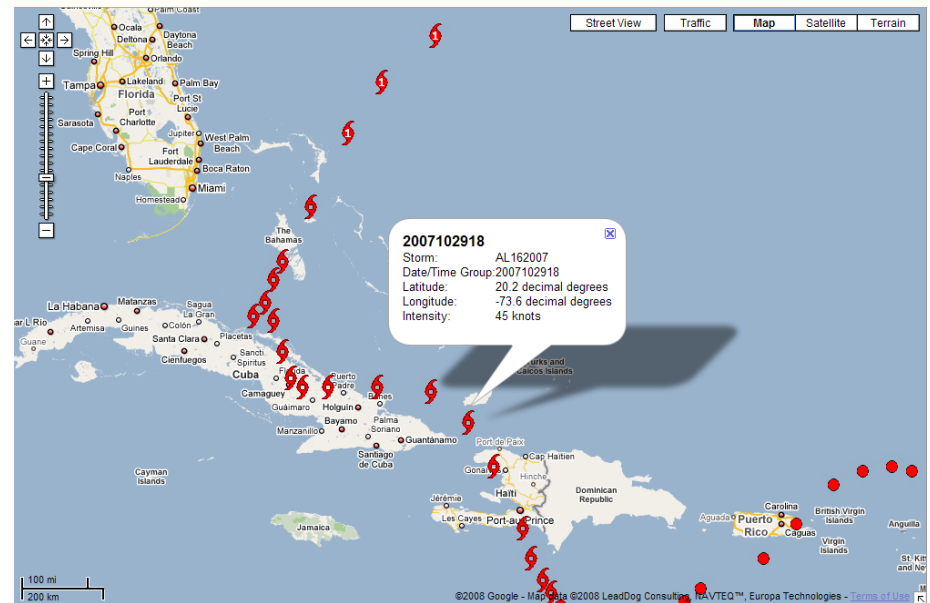
- Roads
- Cities
- Political Boundaries
- Break Points
- Best Track

# Google Maps “Prototype of Best Track information”

- Offers a two dimensional view of the earth.
- Well suited for web applications.



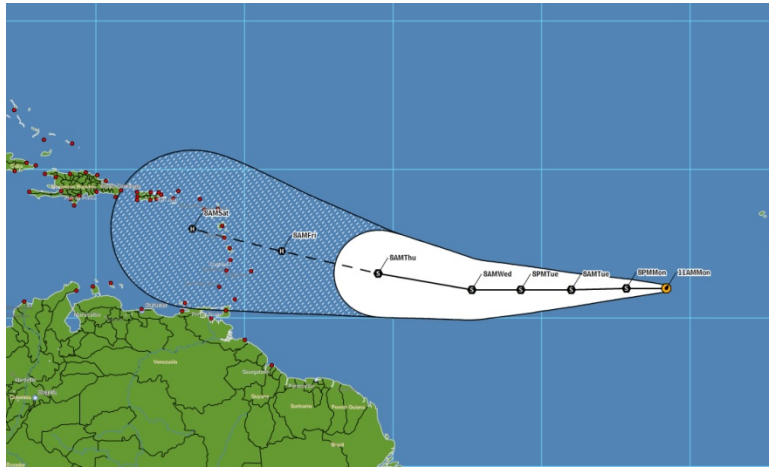
Wind Radii



Best Track Storm Locations (pop-ups)

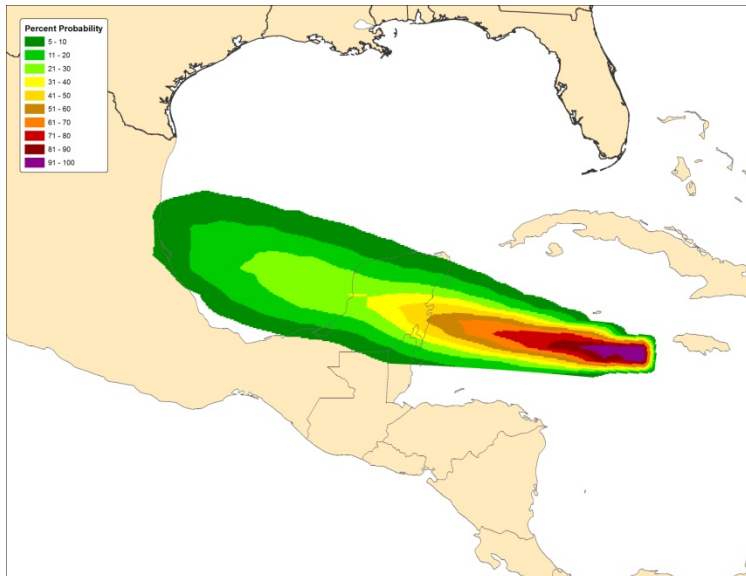


# GIS Shapefiles “Prototypes of Forecast information”

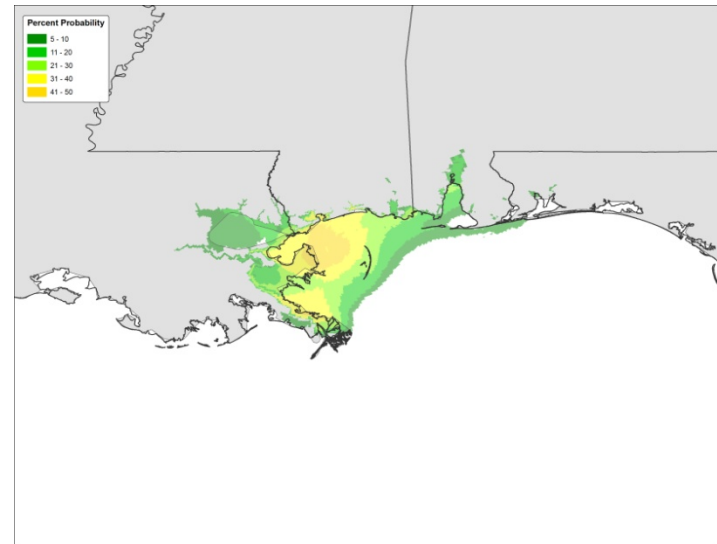


“Cone of Uncertainty”

- Spatial Analysis
- Reporting Capabilities
- Greater “interoperability” with other systems
- In “production design” phase.



“TC Wind Probabilities”



“Probabilistic Storm Surge”



# Interoperable Data Format



## CXML – XML for Tropical Cyclones (WMO)

- Self-describing format (for both human and computer).
- **CMXL** is not a replacement for other WMO standard formats (BUFR, CREX, etc).

```
<cyclone>
<name> Katrina </name>
  <basin> North Atlantic </basin>
  <fix type="forecast" time="2005-08-29T00:06:00Z">
    <latitude units="deg N"> 27.0 </latitude>
    <longitude units="deg E"> -88.9 </longitude>
    <maxWindSpeed units="kt"> 135. </maxWindSpeed>
    <minimumPressure units="hPa"> 910. </minimumPressure>
  </fix>
</cyclone>
```



# Summary

---



- Benefits to primary and external users.
  - Interoperability.
  - Greater decision making and reporting capability.
- Joint Agency cooperation on shared system (efforts are not duplicated).



# Q & A

---



**Questions?**

**Comments?**

**Suggestions?**





# ATCF is a Multi-Agency System



... and a workstation that packages results and code from multiple sources for use in the tropical cyclone forecast process at the centers (e.g., NHC or JTWC)

