

The Road to NextGen 2013: How We Can Get There



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Gray, ME Aviation Workshop

May 12, 2009

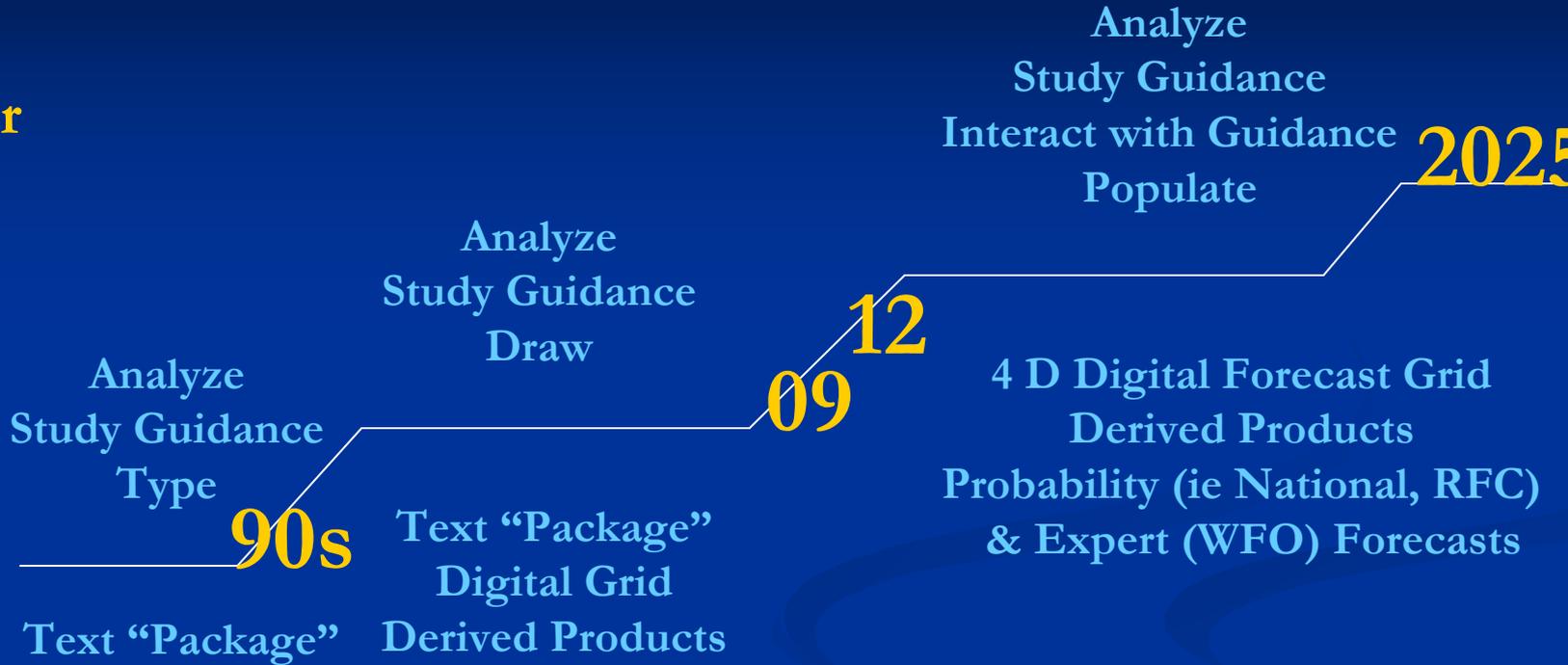
This Is Not...



**Time To Drink
The Kool-Aid!**

Decision Support Foundation

Forecaster



Service

Digital

Detail/Expert

Support

Personal Interaction
(limited Audience)

Personal Interaction
(Limited Audience)
Expanded/Detailed
Products

Personal Interaction
(Limited Audience)
Expanded/detailed
Products
Detailed Data for Intelligent
Software Capability

Three Steps to NextGen for WFOs

- 3-Hourly TAF Amendments
- Enhanced Short Term Forecasting
- Digital Aviation Services

Step 1: 3-Hourly TAF Amendments



3-Hourly TAF Amendments

■ *Why?*

- FAA wants “fresh” information
- Fits in well with enhanced short term philosophy

■ *How?*

- Work with your CWSU
 - Meet with local users (ARTCC, ATCTs, etc)
 - Determine which sites need 3-hourly AMDs and for which time(s)
- Set local policy at your WFO (Local Office Team)

3-Hourly TAF Amendments

Routine TAF Amendments for KBOS

Background:

Based upon feedback from the Boston ARTCC, WFO BOX will provide routine TAF amendments for KBOS at 09z and 15z daily. This is to accommodate air traffic management coordination calls for the morning and late afternoon “push” periods at KBOS, by providing the most up-to-date forecast information. Routine amendments at other 3-hourly intervals (03z, 21z) are not needed at this time.

Method:

WFO forecasters will issue an amended TAF for KBOS around 09z and 15z daily. However, if the TAF has been amended within the previous hour (i.e. 08z and 14z), there is no need to issue another amendment. This is to encourage forecasters to amend the TAF as needed, rather than wait for the scheduled amendment time.

Forecasters should focus on the 0 to 6 hour time frame, keeping in mind the critical “push” times which are centered on 12z and 21z.

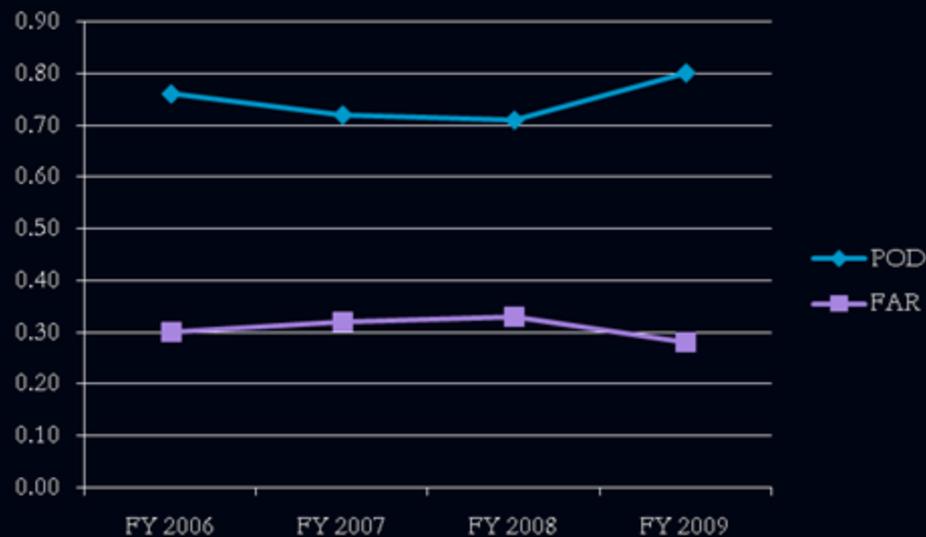
WFO BOX issues AMDs for BOS at 09z/15z only
Correlates with morning/afternoon “push” briefings

KBOS TAF Verification

KBOS MVFR



KBOS IFR



3-Hour AMDs began Nov 2007

Enhanced Short Term Forecasting began May 2008

Step 2: Enhanced Short Term Forecasting



Approach to EST

■ *Staff ownership and buy in*

- Find the best way to get there!
 - Shift duties, shift rotation to meet workload
 - WFO BOX has a Forecast Operations Team

■ *Leverage resources*

- We have found “Short Term/Long Term” approach to be most efficient
- Put effort and detail into the grids
- Spend less time with Days 4-7!
 - New England WFO verification backs this up

EST Concept

- Be as definitive as possible within first 12 hours
 - Tight gradients for PoP, Sky Cover
 - RLX “65/14 Rule”
- Keep the forecast “fresh”
- Everything is considered “high impact” within first 24 hours
 - Folds into Decision Support Services

Database Updates at BOX

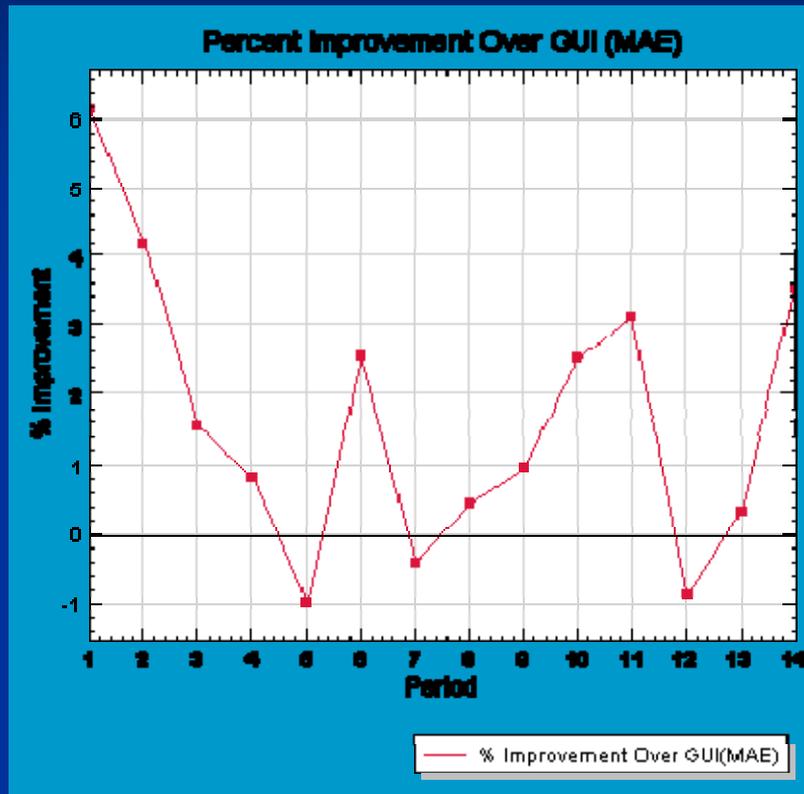
Main Updates and Intermediate Updates

- 4 am, 7 am, 10 am, 1 pm, 4 pm, 7 pm, 10 pm
- Optional 1 am
 - FIC discretion
 - Mandatory when short term headline in effect
- Hybrid update schedule
 - If updated up to 1 hour before scheduled time, next update is skipped
 - 9 am update: next update is 1 pm
 - 11 am update: next update is 1 pm

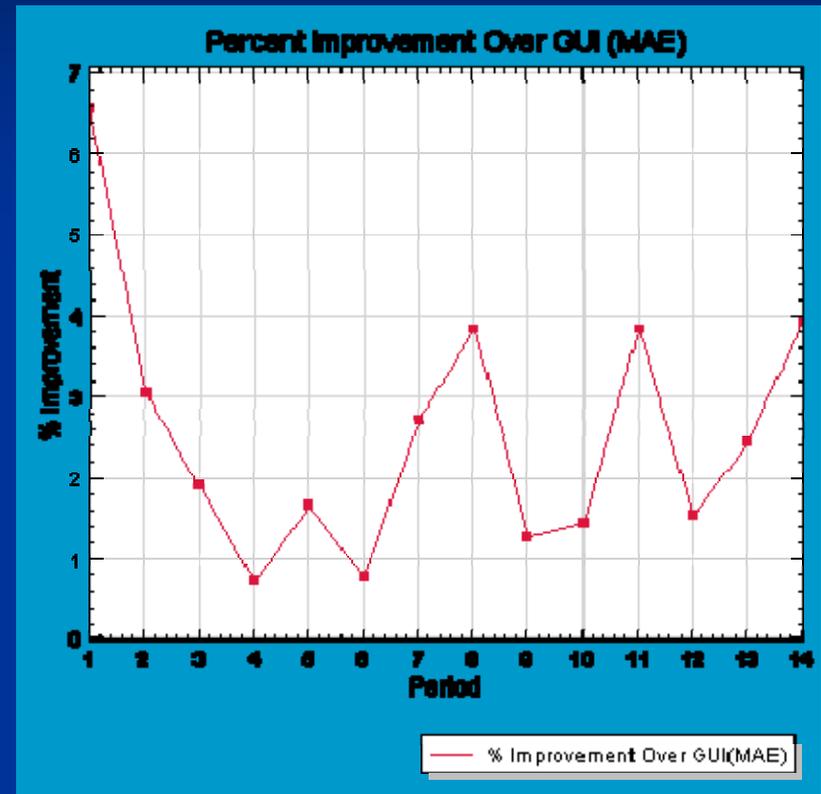
Product Issuance at BOX

- **Publish and GRIB** with each database update!
- Cron issues some routine products automatically
 - **NOW every hour, at :05 past the hour**
 - SPS to supplement for significant short term weather
 - **AFM, PFM, HourlyWx every 3 hours**
 - You can also run these manually, if necessary!
 - **CCF, FTP, SFT 4 am/pm**
- Some products run manually
 - **CWF, FWF, SRF, ZFP 4 am/4 pm and as needed**
 - **AFD as needed**

Max/Min Verification

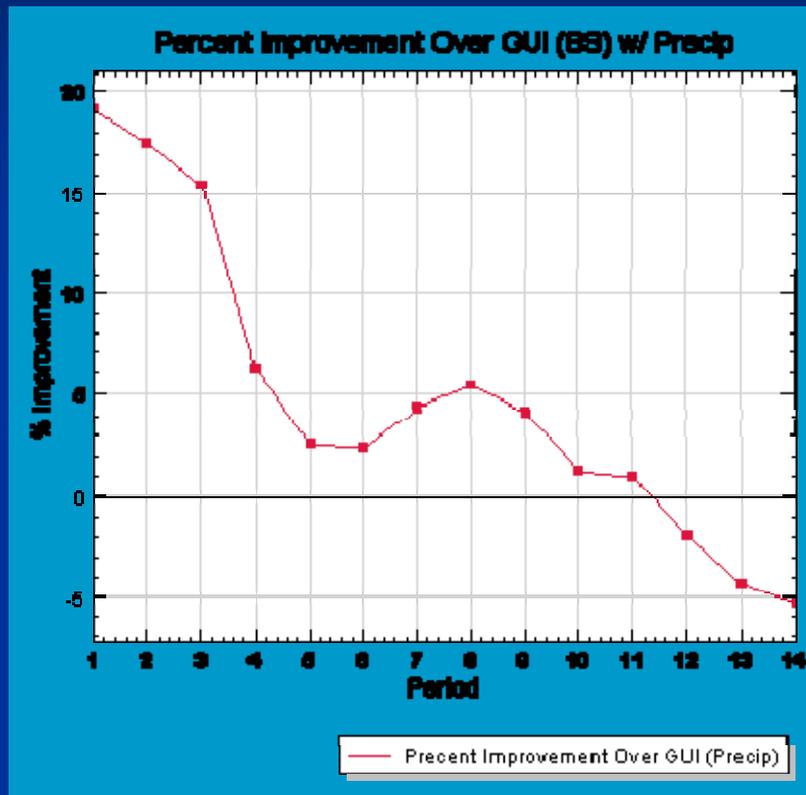


May 07 – Mar 08

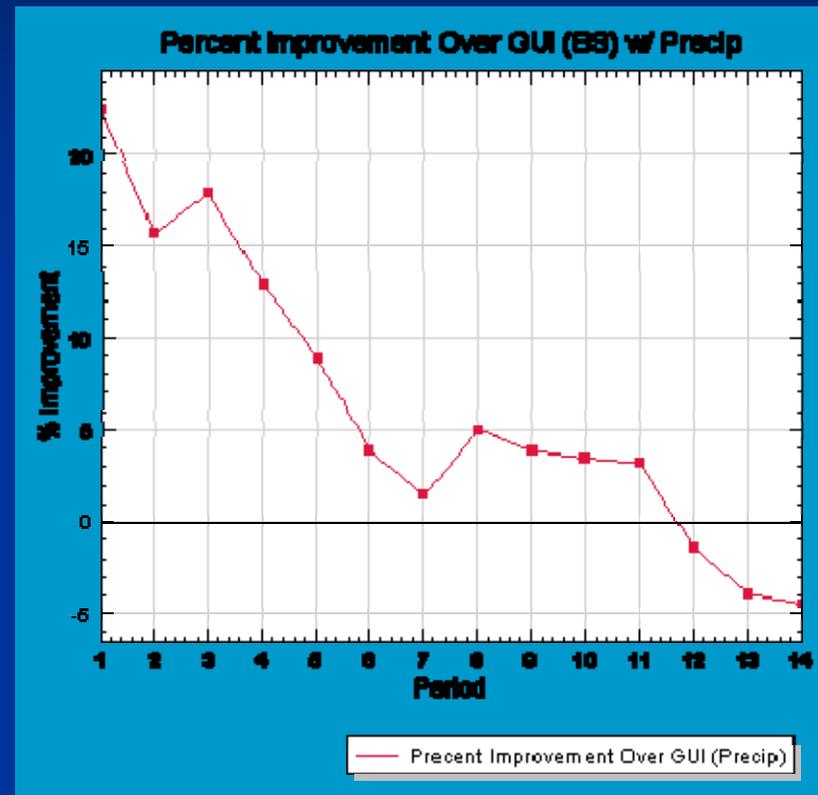


May 08 – Mar 09

PoP Verification



May 07 – Mar 08



May 08 – Mar 09

Warning Verification

WFO BOX Severe Weather Verification

Year	POD	FAR	Lead Time	Events
2006	0.84	0.32	20 min	185
2007	0.89	0.32	17 min	196
2008	0.86	0.28	18 min	487

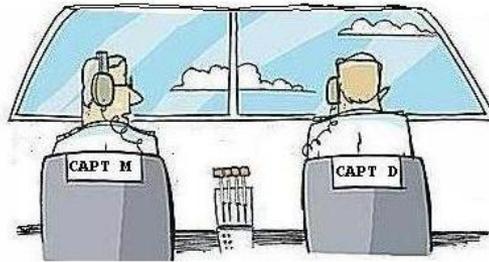
WFO BOX Winter Storm Verification

Season	POD	FAR	Lead Time	Events
2007-08	0.89	0.59	17 hours	132
2008-09	0.92	0.48	21 hours	156

Storm Based Warnings began 10/2007

Enhanced Short Term Forecasting began 5/2008

Step 3: Digital Aviation Services



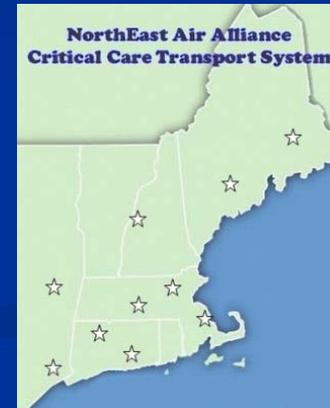
Captain M: "How's our arrival weather looking, David?"

Captain D: "Ummm... 16015G30KT 2 SM -RA SCT007
TEMPO 1415 1 1/2SM RA BR BKN007
FM1500 18020G30KT 2 1/2SM -RA BKN007
TEMPO 1516 4SM -RA BR OVC005
FM1600 18012G22KT 3SM -RA BR OVC006
TEMPO 1617 1/2SM +RA BR OVC002
FM1700 20015G25KT 2SM -RA OVC008
TEMPO 1718 1 1/2SM +RA OVC003
FM1800 19012KT 3SM BR OVC006
TEMPO 1819 2 1/2SM BR OVC003
FM1900 19010KT 5SM BR BKN003
TEMPO 1920 2SM -RA BR OVC002
FM2000 19010KT 1/4SM FG OVC001"

Digital Aviation Services

- *Why?*

- Customers want this information!



Digital Aviation Services

■ *Why?*

■ On the path to NextGen

- AWC/CWSU/WFO roles not yet defined, but we can start the process and provide meaningful input

■ Integrate Aviation forecasting into GFE

- Traditional public, marine, fire weather already there!
- Generate TAFs quickly
- Capability for Point and Click TAFs

Digital Aviation Services

■ *How?*

- WFO BOX is in the process of spinning up ceiling and visibility grids
 - Similar approach as with EST
 - EST sets the groundwork - hourly grids, focus on 0-24 hours
 - Forecast Operations Team chartered
 - Experiences from RLX and GSP

WFO BOX Digital Aviation Services Team Charter

WFO Taunton Digital Aviation Services Team Charter

Purpose

This charter describes the objectives, composition, responsibilities, and operating procedures of the WFO Taunton Digital Aviation Services Team, which is charged with the responsibility to develop a plan to implement ceiling and visibility grids in GFE.

Background

Requirements for NextGen mandate that the Weather Information Database (provided by NWS) "will include at least the elements of turbulence, icing, ceiling, visibility, convection, and winds." IOC is scheduled for 2013. It is strongly advocated at the regional and national level to have WFO gridded forecasts of ceiling and visibility available sooner, in order to prepare for this requirement.

Scope of Authority

The Digital Aviation Services Team will follow these guidelines:

- Team recommendations will be brought to the MIC, who may elect to review with the Office Leadership Team
- The Local Office Team will determine which recommendations, if any, will be implemented

Team Objective

The Digital Aviation Services Team is charged with the following objective:

- Provide an implementation plan for integrating ceiling and visibility grids into GFE by May 30th, 2009. This plan should address:
 - Smart Tools to be used to manipulate model data
 - Creation of grid-based TAFs in AvnFPS
 - Issue all routine text products via cron to decrease workload
 - Less focus on Days 4-7 to help re-allocate resources
 - Staff training

The team may consider a 3-month "trial period" beginning in September, 2009 for greater staff "buy in." This is typically a quiet weather period (end of convective season and before winter weather).

Resources

Several ER WFOs are already producing ceiling and visibility grids operationally, including WFOs GSP and RLX. These offices should be used as resources, especially with respect to development of Smart Tools. The ER RAM is another resource.

Team Membership

Kevin Cadima	Senior Forecaster (Team Leader)
Walter Drag	Senior Forecaster, NWSEO
Matthew Belk	Senior Forecaster, NWSEO
Mike Ekster	General Forecaster
Hayden Frank	General Forecaster

The Road to NextGen 2013

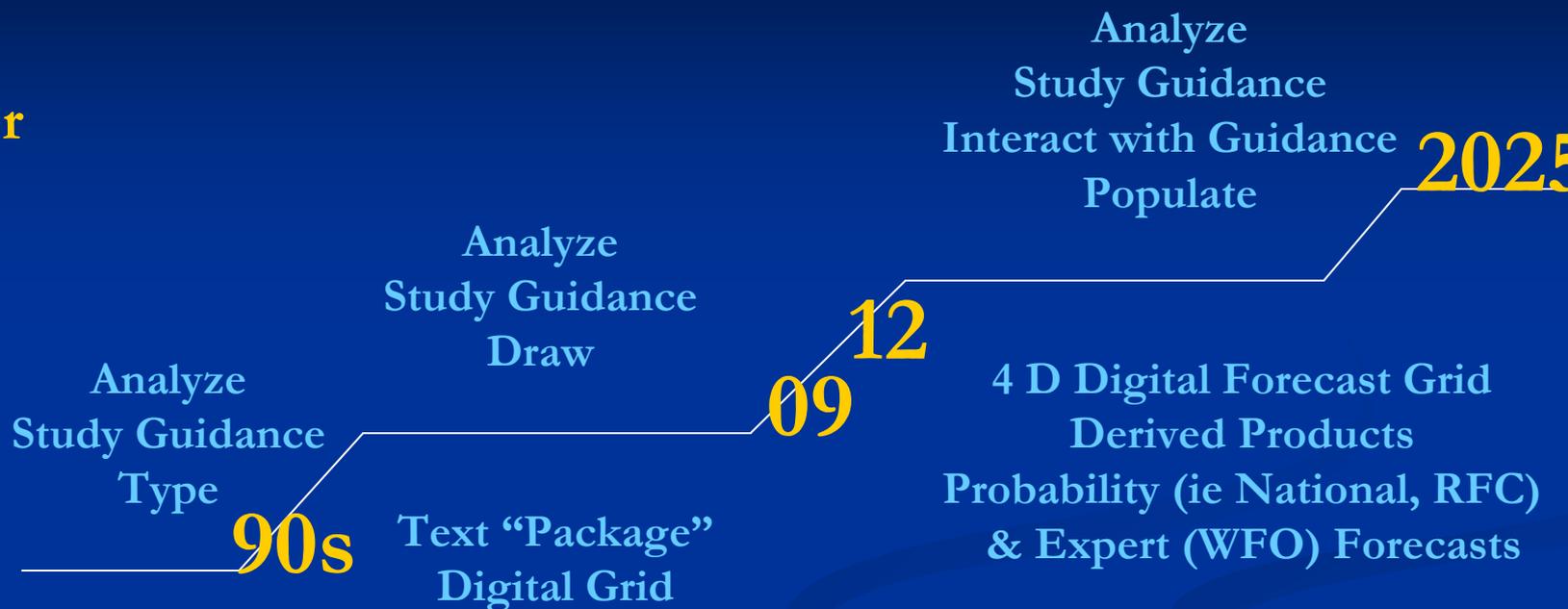
- Take incremental steps – don't do it all at once!
 - 3-Hourly TAF Amendments
 - Enhanced Short Term Forecasting
 - Digital Aviation Services
- Come up with a strategy *as an office*
 - Use the team approach
 - Staff buy-in and ownership are crucial
- Use experiences of other WFOs as a guide
 - RLX, GSP, BOX “We're Here To Help”

The Road to NextGen 2013

- WFO BOX Time Line
 - 3-Hour KBOS TAF AMDs
 - November, 2007
 - Enhanced Short Term Forecasting
 - May, 2008 (6 Months)
 - Digital Aviation Services
 - Planned: October, 2009 (17 Months)

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Forecaster



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QUESTIONS?