

**XEFS into CHPS**  
**Phase I**  
**Objective and Approach**

Hank Herr

# XEFS Phase I: Objective

- Fast-track science development in FEWS

# XEFS Phase I: Approach

- Wrap existing prototypes (including ens\_post and ens\_pre) within “model adapters” for quick delivery to prototype RFCs
  - A model adapter allows for FEWS to execute the underlying model and is responsible for:
    - Translating FEWS XML input data into formats understandable by the prototype
    - Executing the prototype
    - Converting output from prototype into FEWS XML

# XEFS Phase I: Features

- Prototypes will be executable without needing to change model parameters or move files
  - FEWS module properties and parameter files will instruct the model adapter on which prototype executable to run and for which configuration files
  - Depends upon migration of operations to CHPS, and whether or not FEWS produces nearly (or exactly) the same numbers as NWSRFS
    - If not, then the models may need to be recalibrated

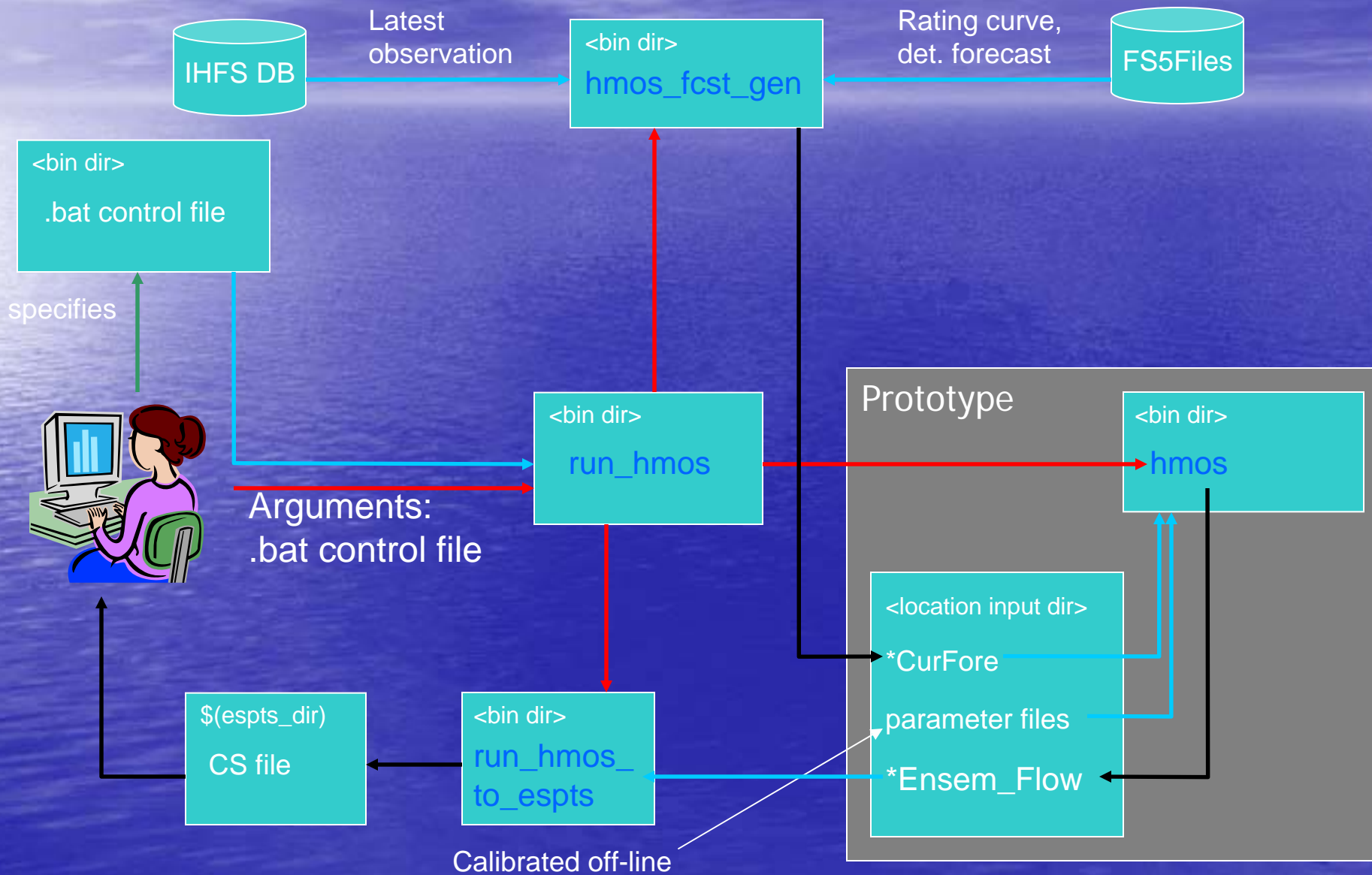
# XEFS Phase I: Features

- Prototypes may need modifications in order to break any links with the OFS database (fs5files)
  - Example: Versions of Ensemble Post-Processor and Ensemble Pre-Processor will be delivered that do not depend upon the OFS database

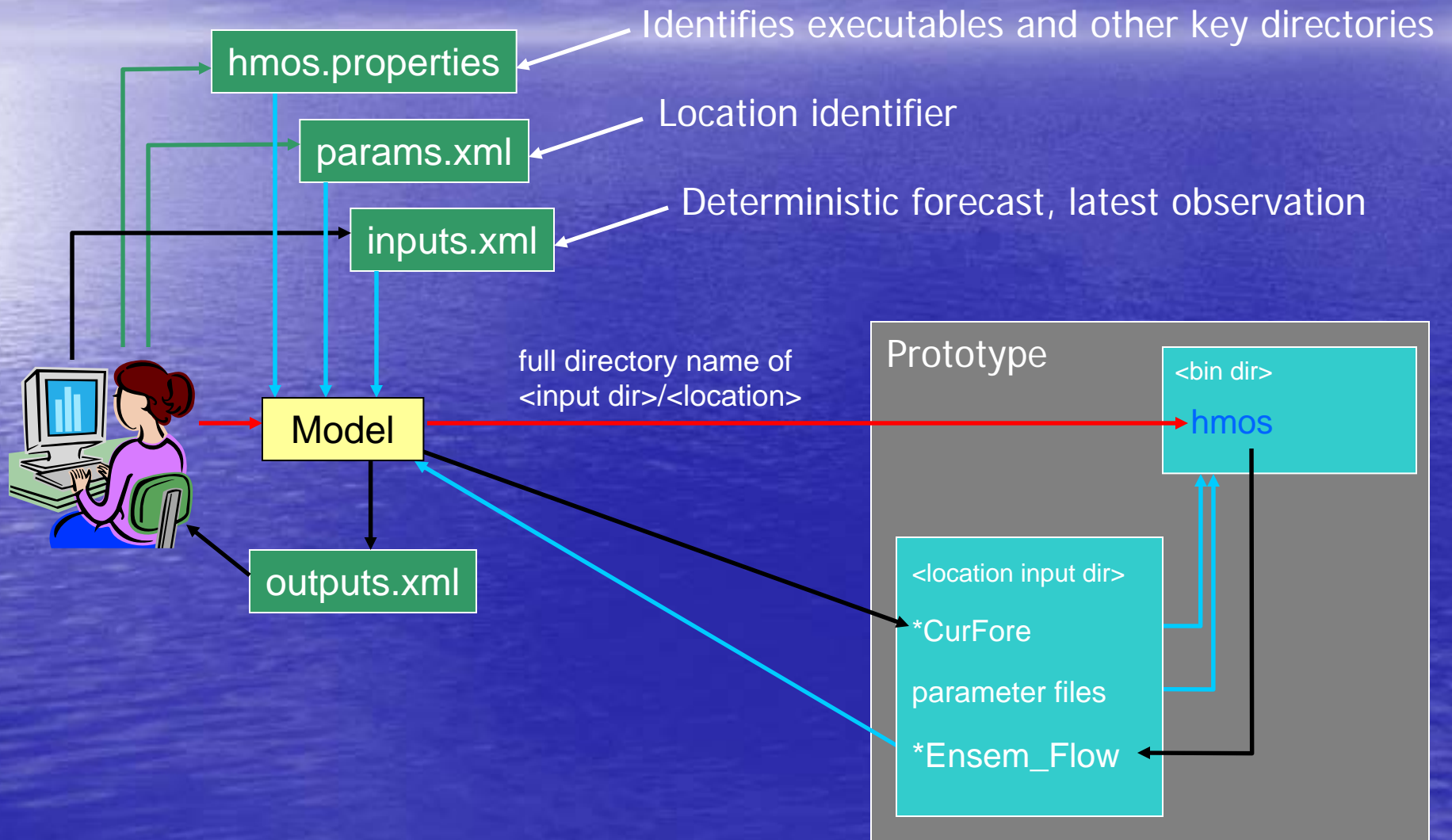
# XEFS Phase I: Features

- Field offices will be responsible for maintaining configuration files to execute prototypes
  - Templates will be provided to assist in this process

# Example: HMOS for NWSRFS



# Example: HMOS for FEWS





# Phase I: Tasks Completed

- Climatology-based ESP wrapped in model adapter
  - Classical ESP
  - Uses existing datacard files for inputs
  - Could include pre-processed ensembles in any time zone
- Prototype HMOS wrapped in model adapter
- Operational ENS\_POST wrapped in model adapter
  - Altered to disconnect it from fs5files
- Operational ENS\_PRE wrapped in model adapter
  - Altered to disconnect it from fs5files
- Prototype EPP2 wrapped in model adapter
  - Requires updating because current version relies on fs5files for data
- Proof-of-concept prototype EPG built as a model adapter

# Phase I: Tasks Remaining

- EPP2/EPP3 must be wrapped in model adapter
  - Will proceed once a version is available that does not require fs5files for input
  - Should I wrap EPP2 and the GFS Subsystem or wait until EPP3 is available?
- Implement historical simulations using datacard precipitation and temperature data
  - Similar to a calibration run
- Calibration
  - Should Phase I include calibration components for any of the models?
- Hindcasting
  - Identify FEWS capabilities
  - Add other capabilities as needed
- EVS
  - Identify what to do about this as well as IVP
- ESPADP
  - Develop an interim version of ESPADP until functionality is present within XEFS
- EPG
  - Lots of questions (What are the requirements? Who will develop it? etc.)