Utilizing Hazard Services Concepts for Product Creation at the Aviation Weather Testbed

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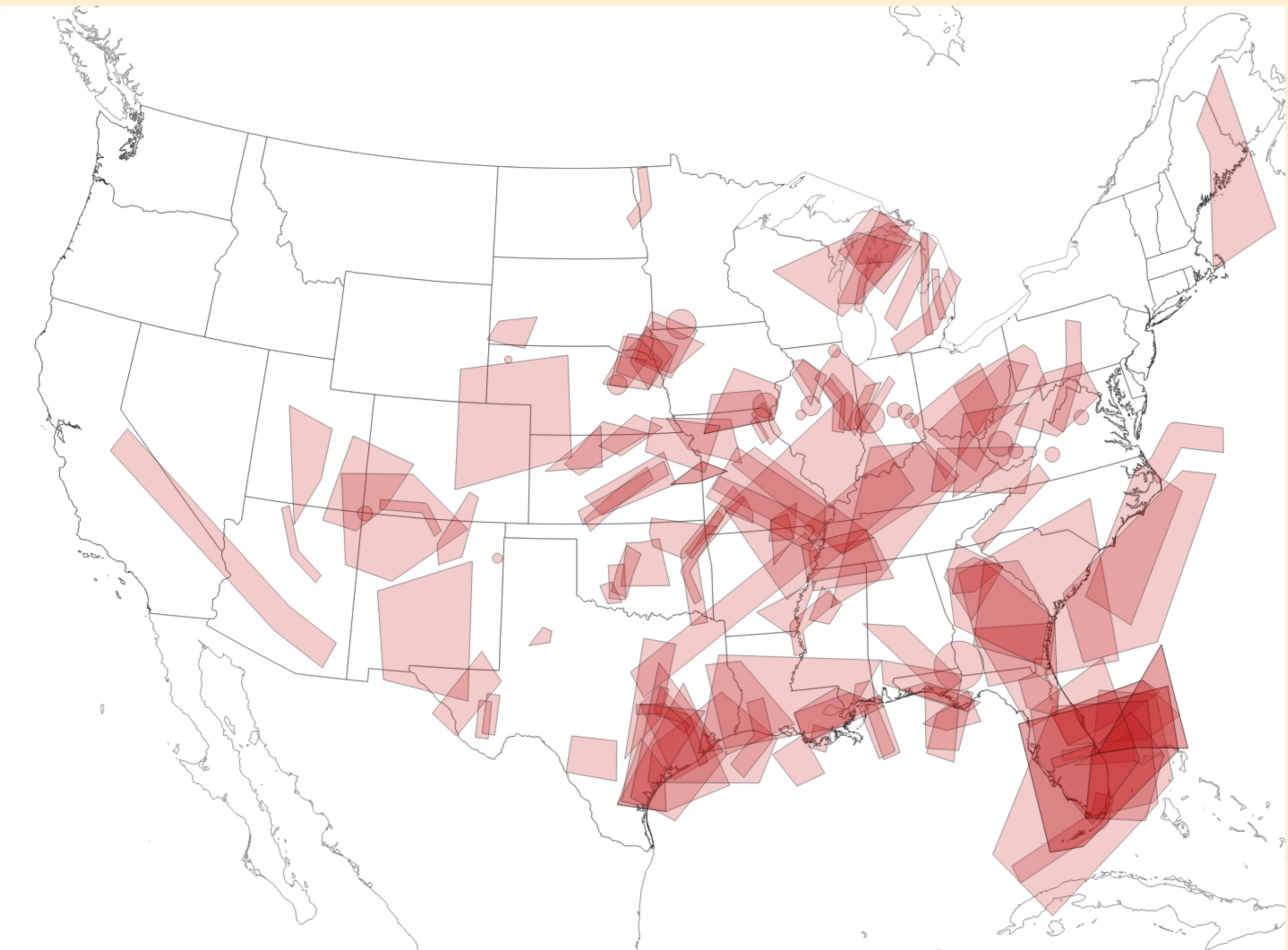
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Overview

The 2016 Aviation Weather Testbed (AWT) Summer Experiment performed a test of the Aviation Weather Center's (AWC) ability to produce the Convective SIGMET product within the Advanced Weather Interactive Processing System (AWIPS) 2. AWC currently uses N-AWIPS software combined with locally developed tools for SIGMET production. This test leveraged work from the NOAA Earth Science Research Laboratory (ESRL) on the experimental Hazard Services software platform.

Hazard Services is a framework for the issuance of hazard information meant to unify many of the existing application tools with AWIPS including WarnGen, RiverPro, and the Graphical Hazard Generator (GHG). This platform has the potential to also replace legacy N-AWIPS and local applications currently in use by operational forecasters at AWC with one integrated solution, harnessing the other advancements provided by the AWIPS platform.


Convective SIGMETs issued during the two week 2016 AWT Summer Experiment

Current convective SIGMET process requires drawing in one program and composing a product in another. Changes to geometry require switching back and forth.

Convective SIGMET creation in Hazard Serivces using radar and satellite data

Outcomes

The aging testbed AWIPS system provided some technical challenges. A new workstation was built and added to the system to achieve reasonable performance in the display of high resolution radar data for forecast production. Instability was introduced to the system by a previously unknown software bug resulting in the runaway creation of database records. This combined with the load of other testbed activities resulted in less than ideal user interface performance.

The summer experiment provided an opportunity for developers to interact directly with the end users, forecasters. This collaboration led to rapid troubleshooting and inspiration for future work.

The use of AWIPS is still fairly new to AWC so many forecasters were being introduced to the general use of AWIPS in addition to the new interface components from Hazard Services. Despite the learning curve and technical issues experience, there was strong agreement that the platform represents a big step forward from the current process.
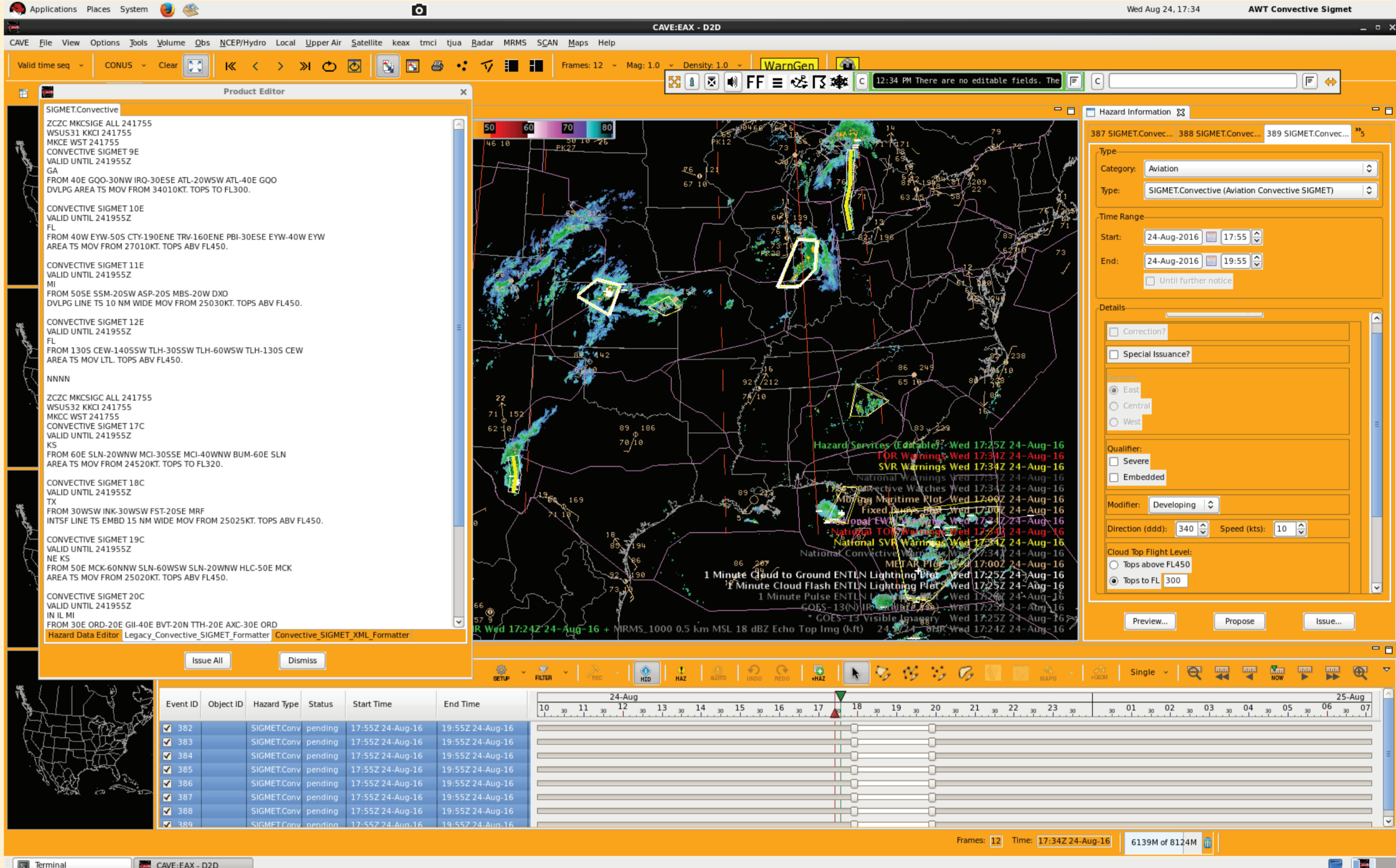
Unlike N-AWIPS, AWIPS allows for the dynamic loading of different data sets and dockable hazard creation windows within one interface. Participants put the platform to the test issuing numerous products.
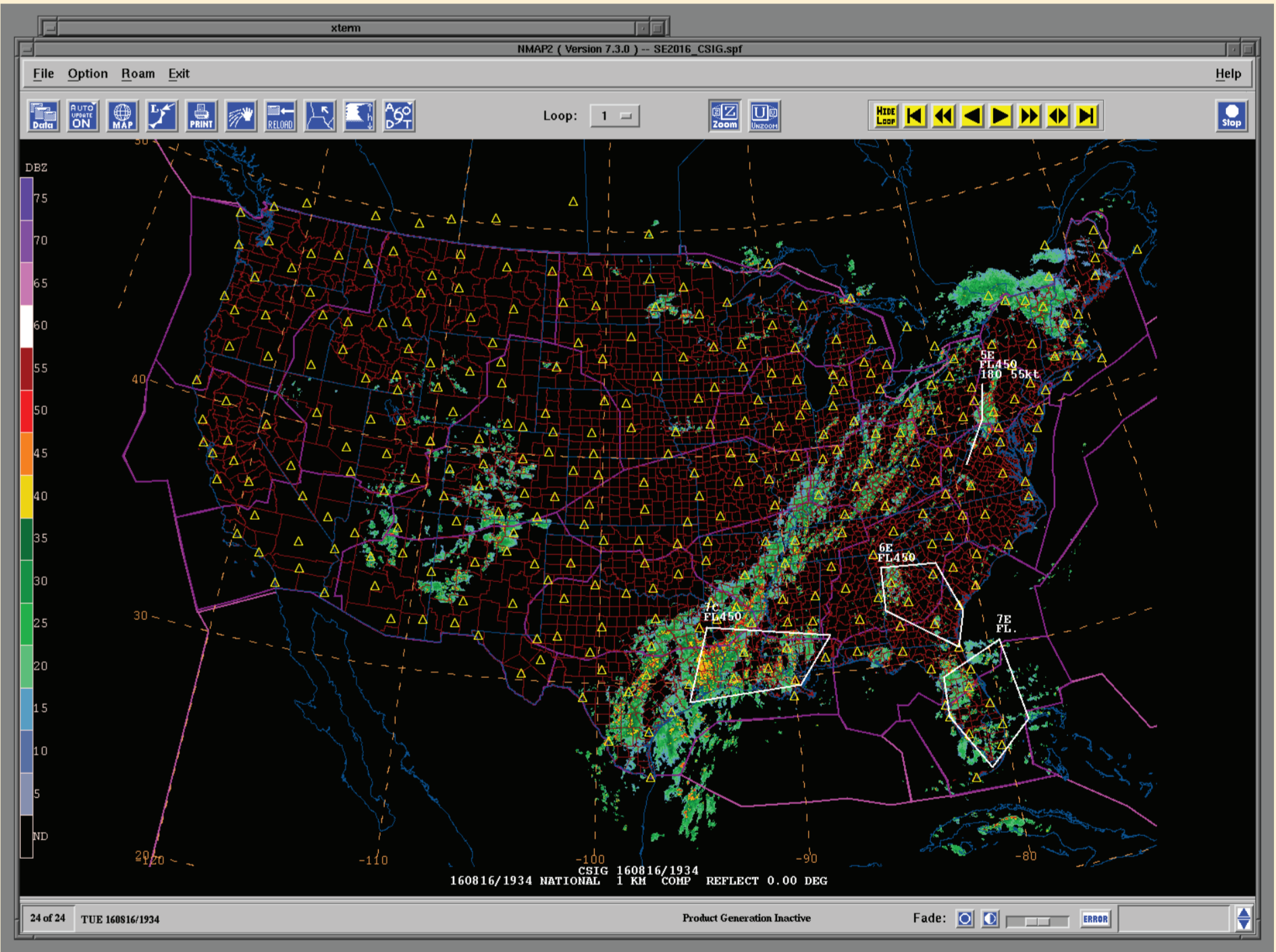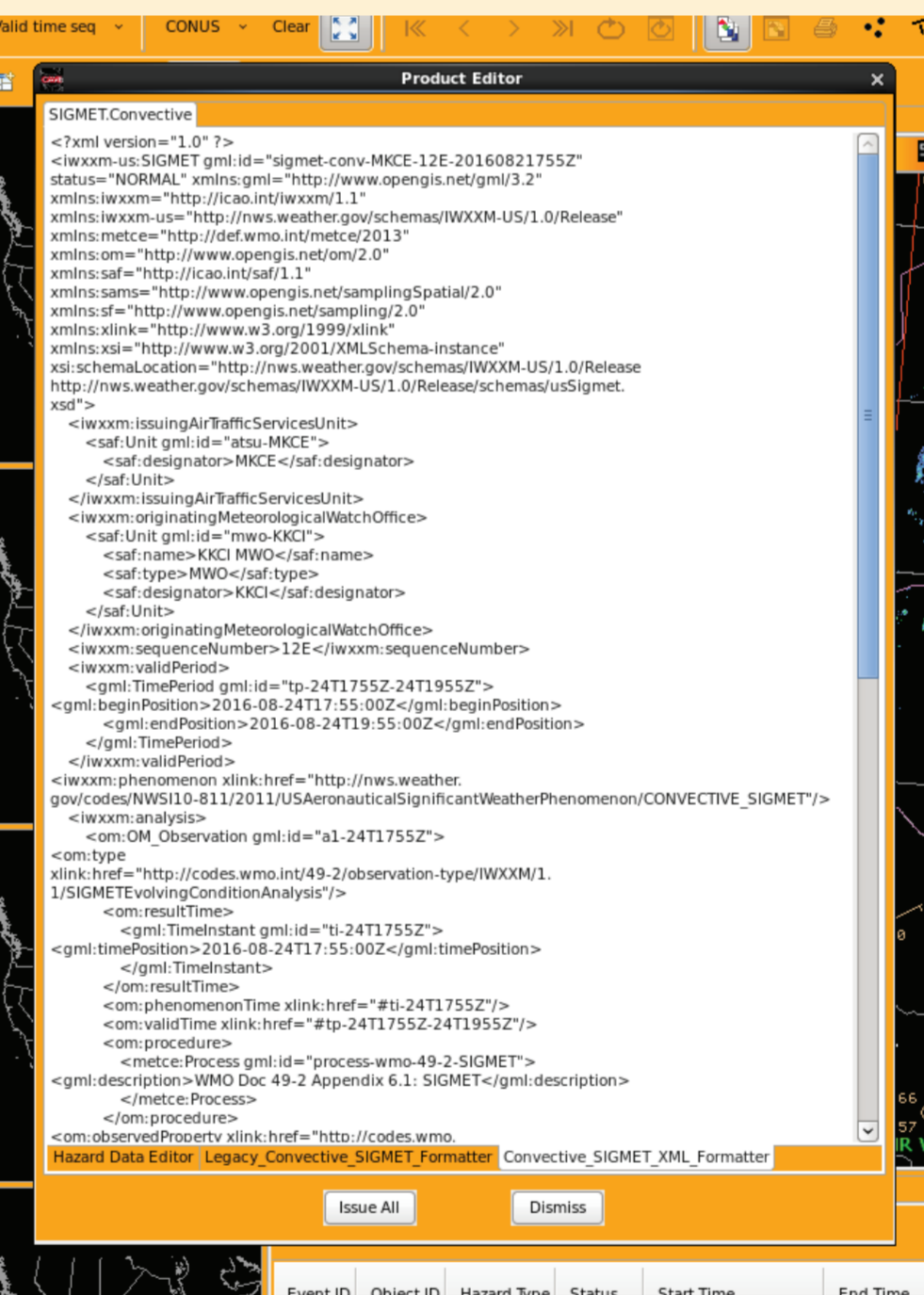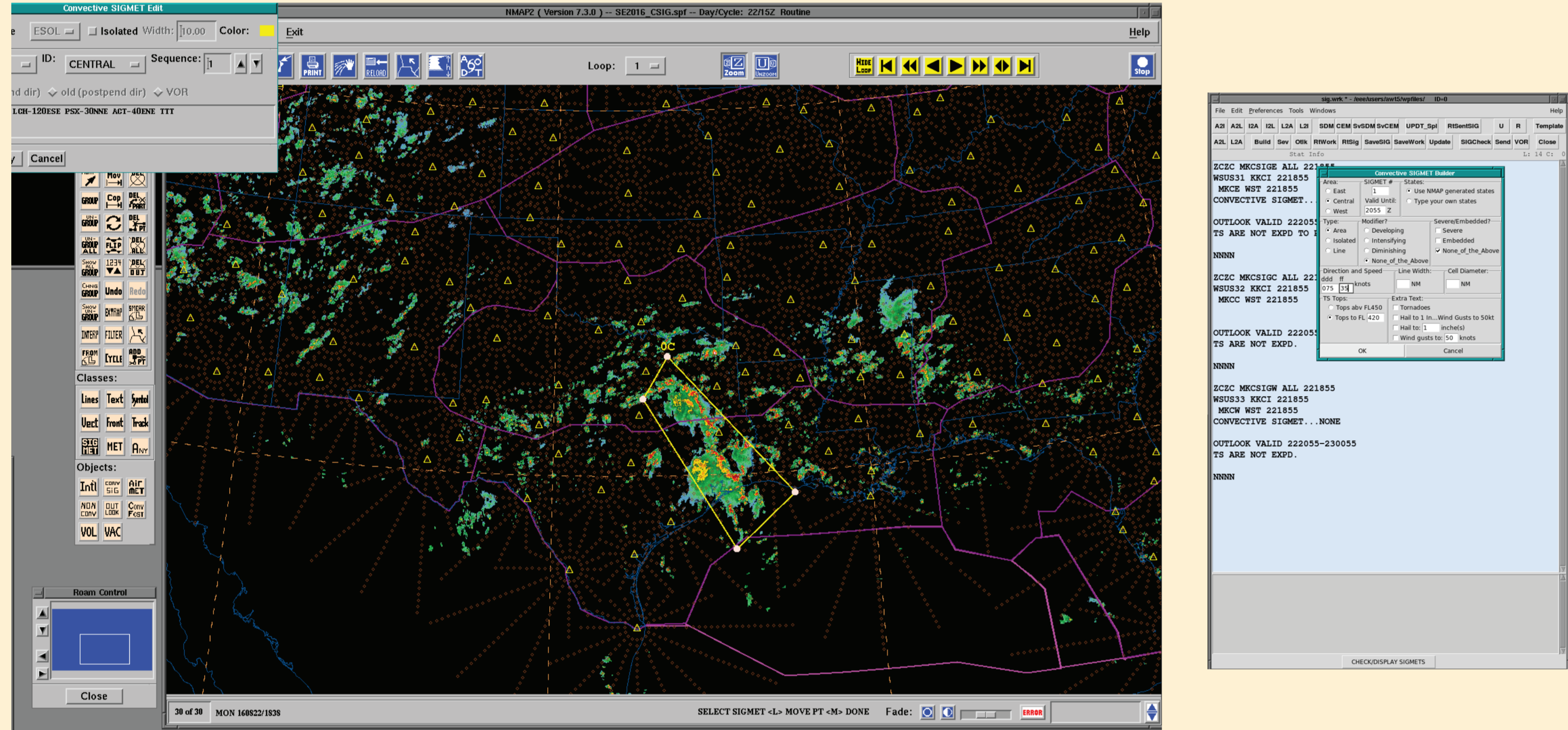

IWXXM format XML hazard information. Hazard Services allows for the running of multiple formatters using the same hazard information, allowing legacy formats and implementing new requirements.
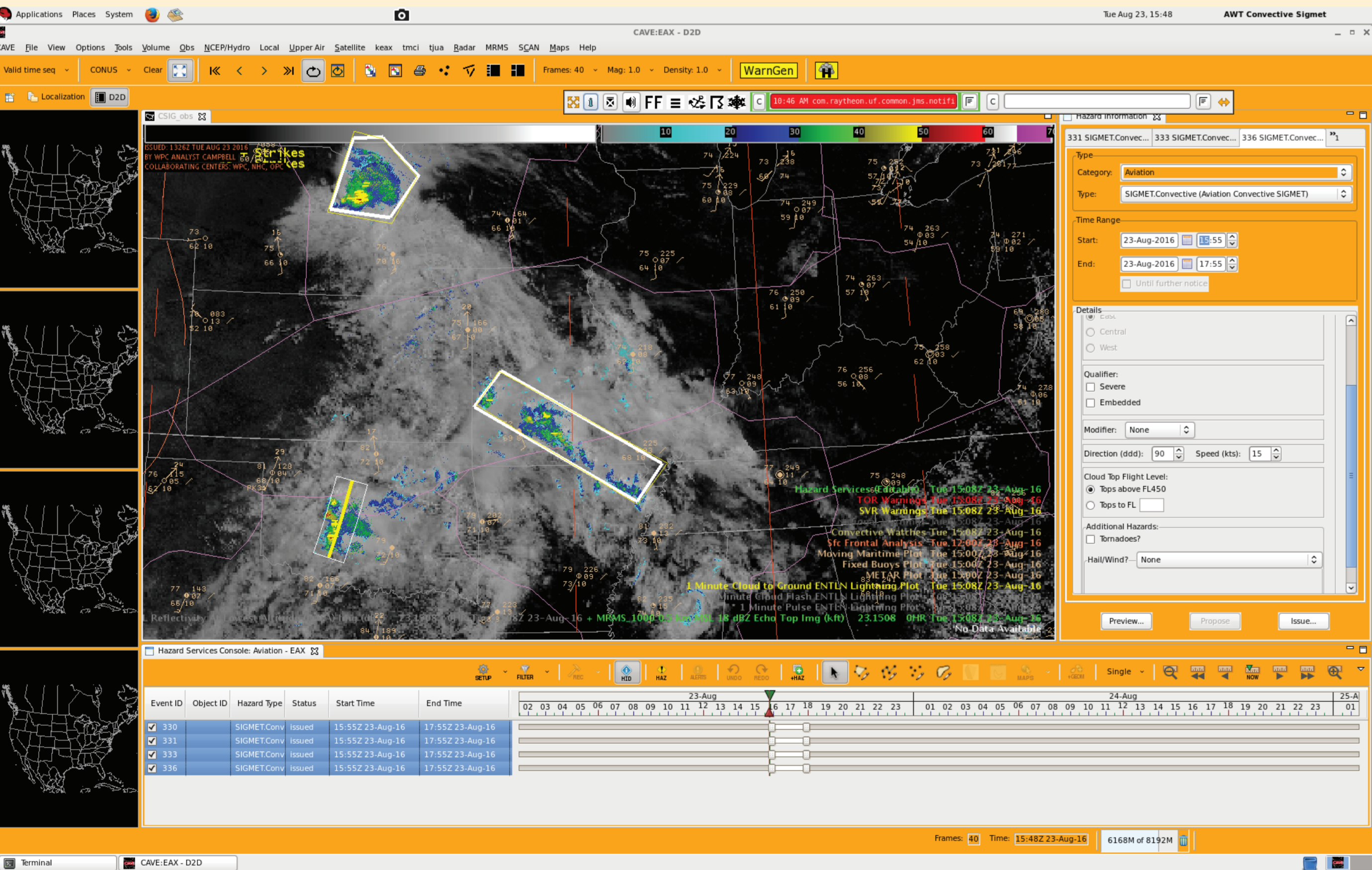

Products issued through the new platform are fully compatible, as seen in the use of the operational N-AWIPS system for visualization and verification.

Future Work

Hazard Services is potentially applicable to numerous products issued by AWC. Development work is continuing, establishing capabilities for AIRMET and non-convective SIGMET products.

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