



The UConn OPM – Enhancing Prediction Accuracy & Supporting the Emergency Response Team with Real-Time Outage Forecasts

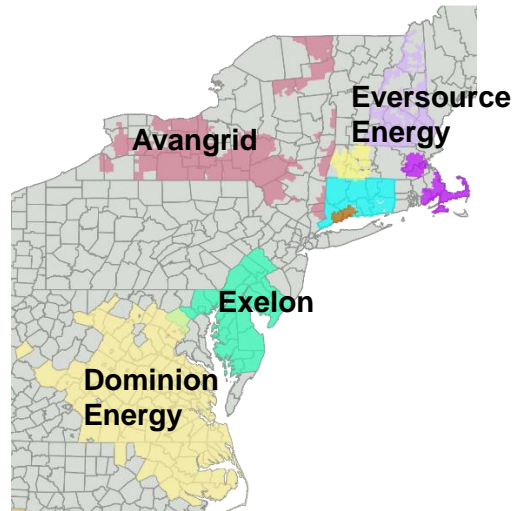
The logo for the UConn Outage Prediction Model (OPM). It features the text "UConnOPM" in a large, bold, black sans-serif font. The letter "O" is replaced by a yellow lightning bolt icon. Below this, the words "OUTAGE PREDICTION MODEL" are written in a smaller, bold, black sans-serif font.

UConnOPM
OUTAGE PREDICTION MODEL

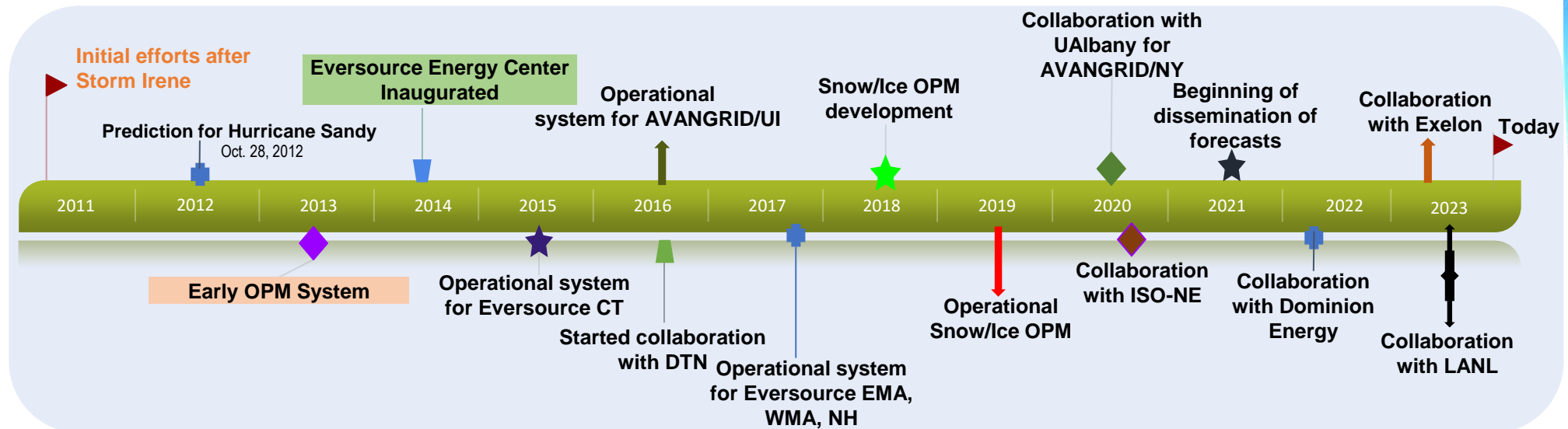
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Industry Relevance & Need



A growing number of utilities has been finding UConn's outage prediction capabilities useful for their operations.

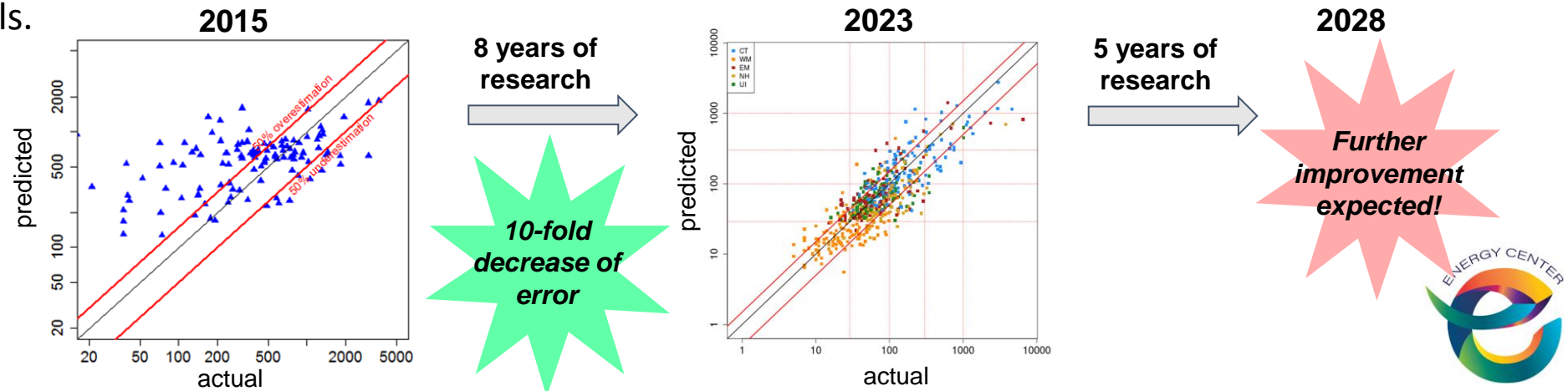


Project Goals and Objectives

Goal of this project is to continue the development and operation of the UConn Predictive Storm and Outage models for Eversource Connecticut service territory, by regularly updating and improving the model based on updated infrastructure and OMS data.

Specific objectives include:

- Continue the operational use of OPM for Eversource CT to support storm preparedness activities.
- Use enhanced variables from the new WRF 4.2 in the UConn Outage Prediction Model.
- Enhance OPM predictions based on improved rain/wind, snow, ice, thunderstorm and hurricane models.

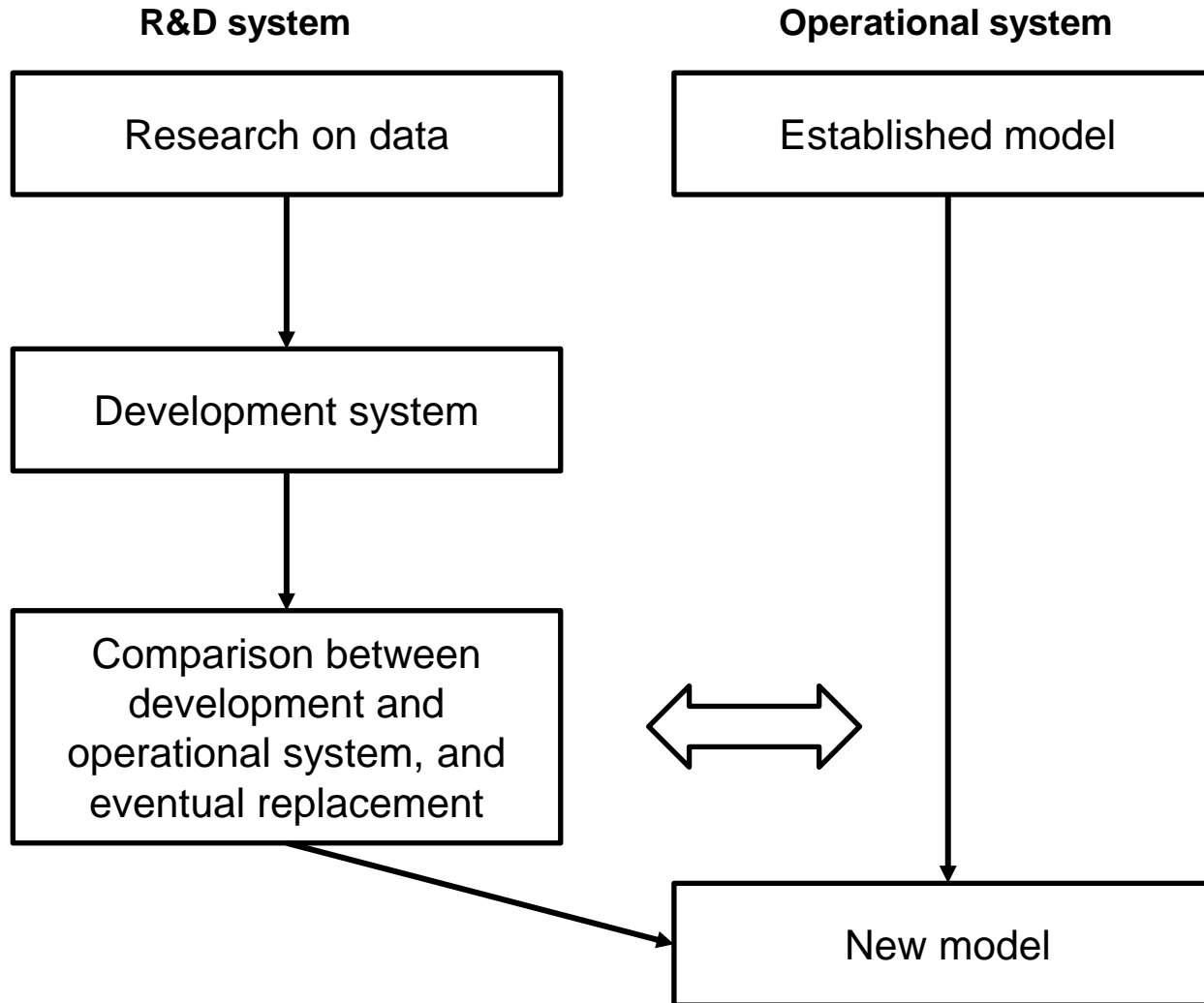


From Research to Operations

1st stage: 3-6 months

2nd stage: 3 months to 1 year

3rd stage: 1 month



Outcomes and Deliverables

Date	Activity Report	Deliverable
End of Q4 each year (2023-2027)	<ul style="list-style-type: none"> Report on Winter OPM Report on improvement of OPM from new snow variables developed by the weather team 	<ul style="list-style-type: none"> New OPM winter model version implemented annually
Q1 each year (2024-2028)	<ul style="list-style-type: none"> Report on Thunderstorm OPM Report on improvement of OPM from new gust variables developed by the weather team 	<ul style="list-style-type: none"> New OPM thunderstorm model implemented annually
Q2 each year (2023-2028)	<ul style="list-style-type: none"> Report on Extreme events OPM Report on improvement of OPM from new hurricane variables developed by the weather team 	<ul style="list-style-type: none"> New extreme events OPM implemented annually
Q3 each year (2023-2027)	<ul style="list-style-type: none"> Report on Rain/wind OPM Report on improvement of OPM from new rain/wind variables developed by the weather team 	<ul style="list-style-type: none"> New version of OPM for rain/wind events implemented annually
Annually/quarterly/monthly	<ul style="list-style-type: none"> Performance evaluation of the operational OPM. Quarterly progress updates with project PIs 	<ul style="list-style-type: none"> Performance report presented at the annual meeting and in regular update meetings with Eversource managers.





The impact of this project will include, beyond Eversource, also many other stakeholders and the communities:

- The highly granular improved OPM system used to predict distribution grid outages will provide Eversource with critical and more accurate pre-storm data and situational awareness.
- The OPM forecasts can be used to support pre-storm crew allocation and deployment decisions, and ERP event level classifications.
- The communication of OPM forecasts to the NWS Office in Boston/Norton MA allows NWS to include quantitative wording related to outage threats into NWS guidance and severe weather watches/warnings.
- The enhanced situational awareness, the consequential reduction of outage duration, and the communication of outage threats to the population will improve the quality of life for the people living in the communities served by Eversource.

