

“Using Tomorrow’s Technology to help manage
Yesterday’s Infrastructure”

Integrating technology into decision making

David Fortune
Vice President of Innovation

The logo for Innovyze consists of the word "Innovyze" in a bold, blue, sans-serif font. A registered trademark symbol (®) is positioned at the top right of the letter "z". To the left of the text, there is a decorative graphic element consisting of several thin, light blue wavy lines of varying lengths, creating a sense of motion or depth.

Innovyze®

Internet of Things

Big Data

Digital Twin

Artificial Intelligence

Machine Learning



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Internet of Things

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Internet of Things

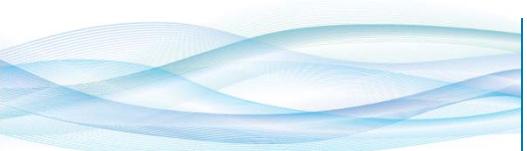
Big Data

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“Using Today’s Technology to help manage Yesterday’s Infrastructure”



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Asset Management – virtual model of the real world

Asset model of the network:

- What you have
- Where it is
- How it is connected
- How it was built
- Inspection and survey history
- What condition it is in



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Asset Management – virtual model of the real world

Better informed planning:

- Inspections, surveys, maintenance, refurbishment, renewal
- Better public response
- Reduce capex & opex
- Reduce risk of failure
- Increase resilience

InfoAsset Online: “sharing the asset model throughout the organisation”



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Water supply, storm, sewer and river hydraulic models

- All water companies in the UK have hydraulic models
- Used for planning
- Many models are built and then shelved until they are next required
- Many different versions of the same model exist.



Water supply, storm, sewer and river hydraulic models

Can modellers & models support operations?

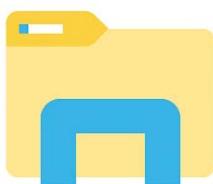
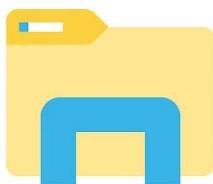
Yes, if the model reflects real-life:

- Up to date
- Fed by live data
- Results available to operations managers
- Driven by modellers



Online Modelling

Offline Models



Online Model

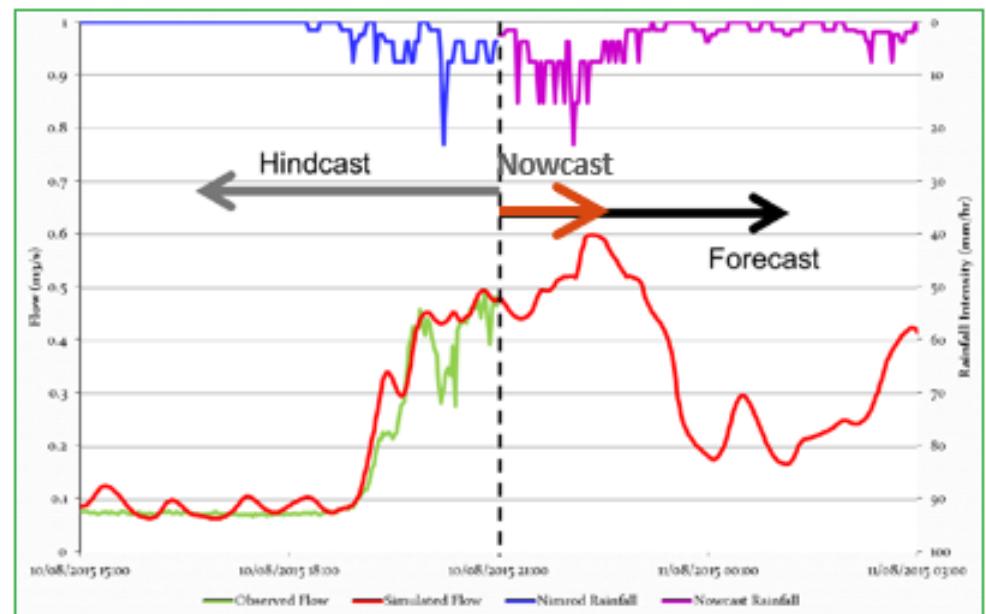
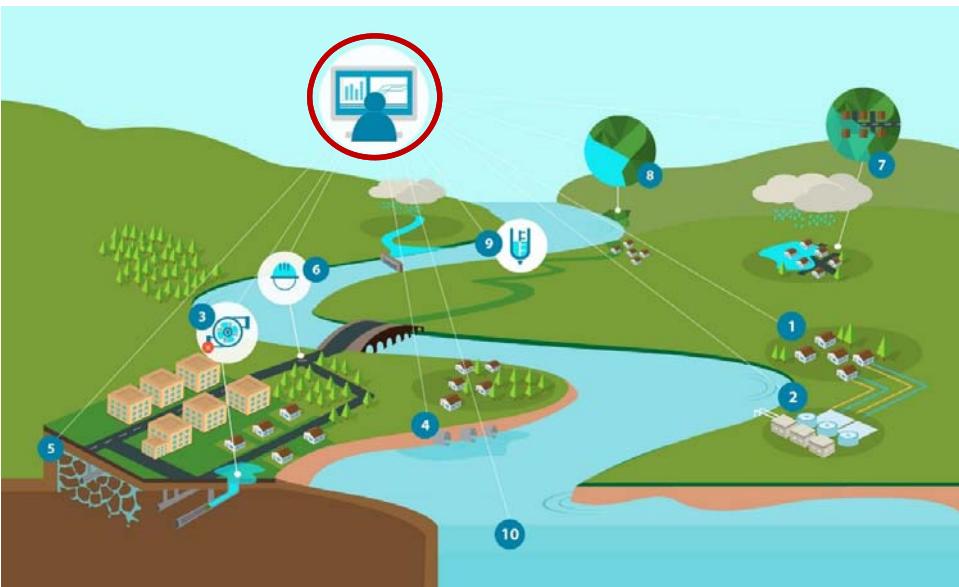


Online - Decision support and planning for Operations



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Online Modelling: monitoring and forecasting

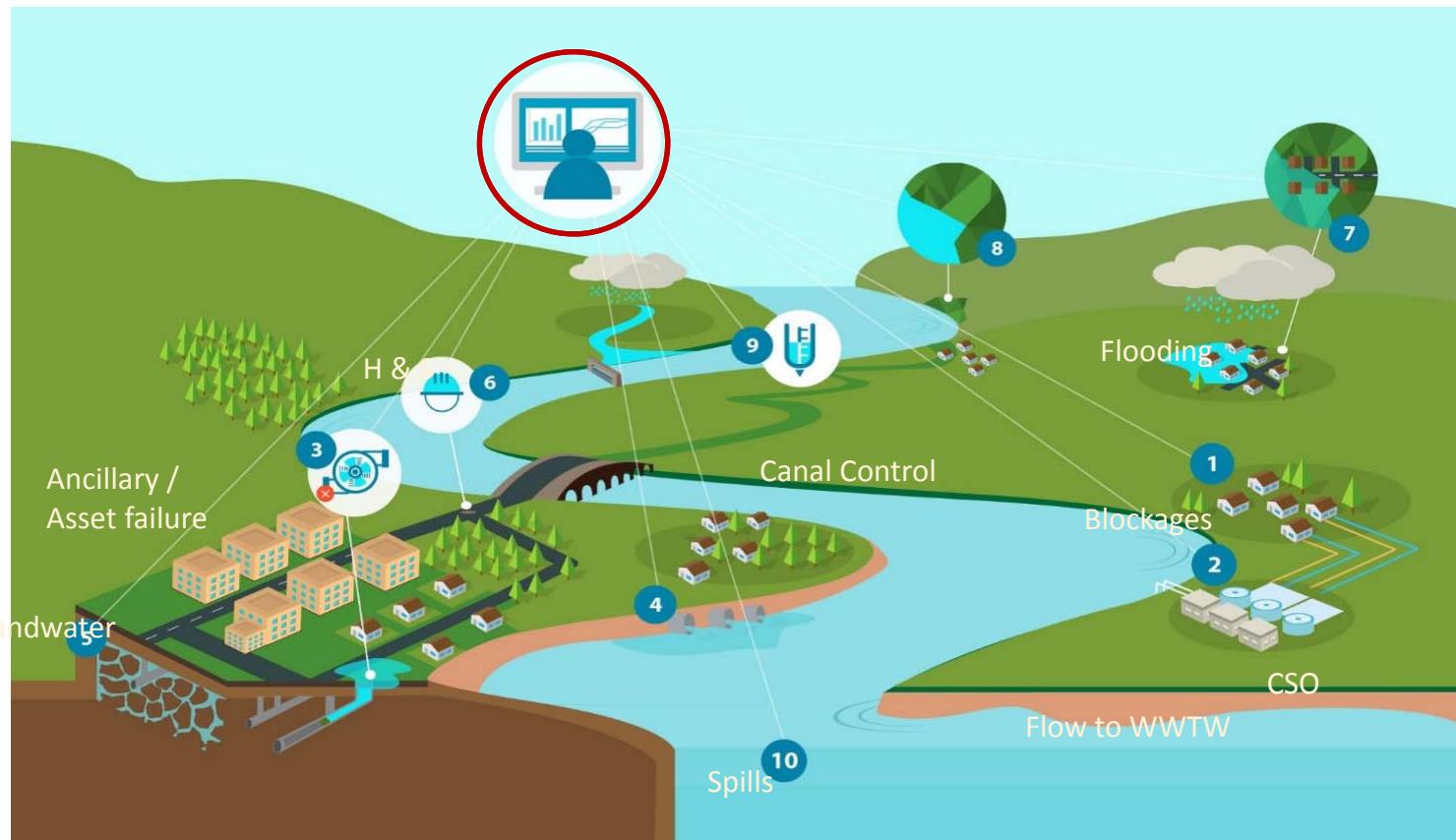


Monitoring

Forecasting

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Online Modelling: examples



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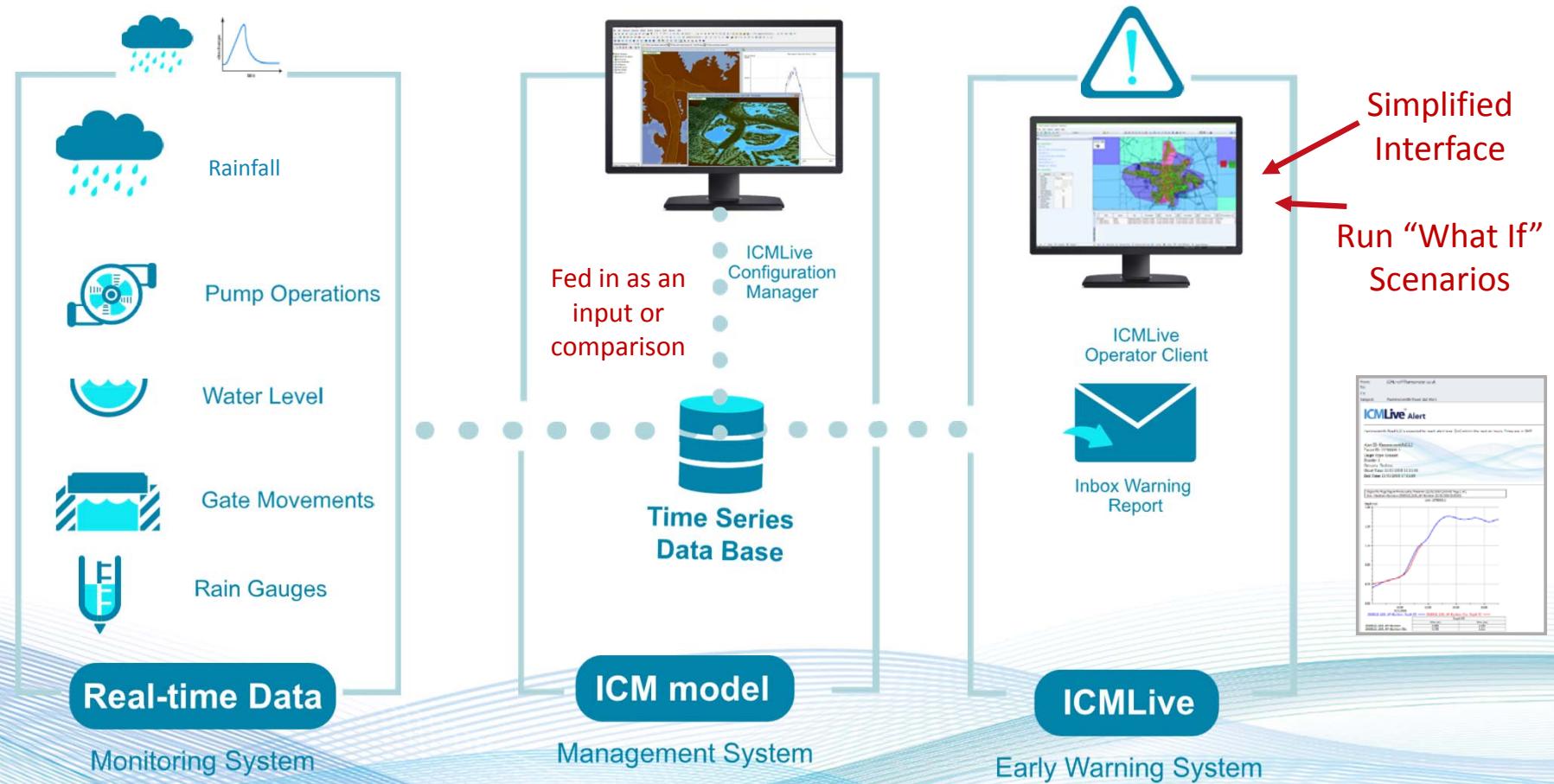
Benefits of operational information & timely intervention

- Reduced flooding
- Less overflows
- Better treatment plant control
- Better response to the public
- Service reservoir management
- Treatment plant management
- Reducing the impact of bursts
- Off-peak energy optimization
- Better water quality
- Better response to the public
-
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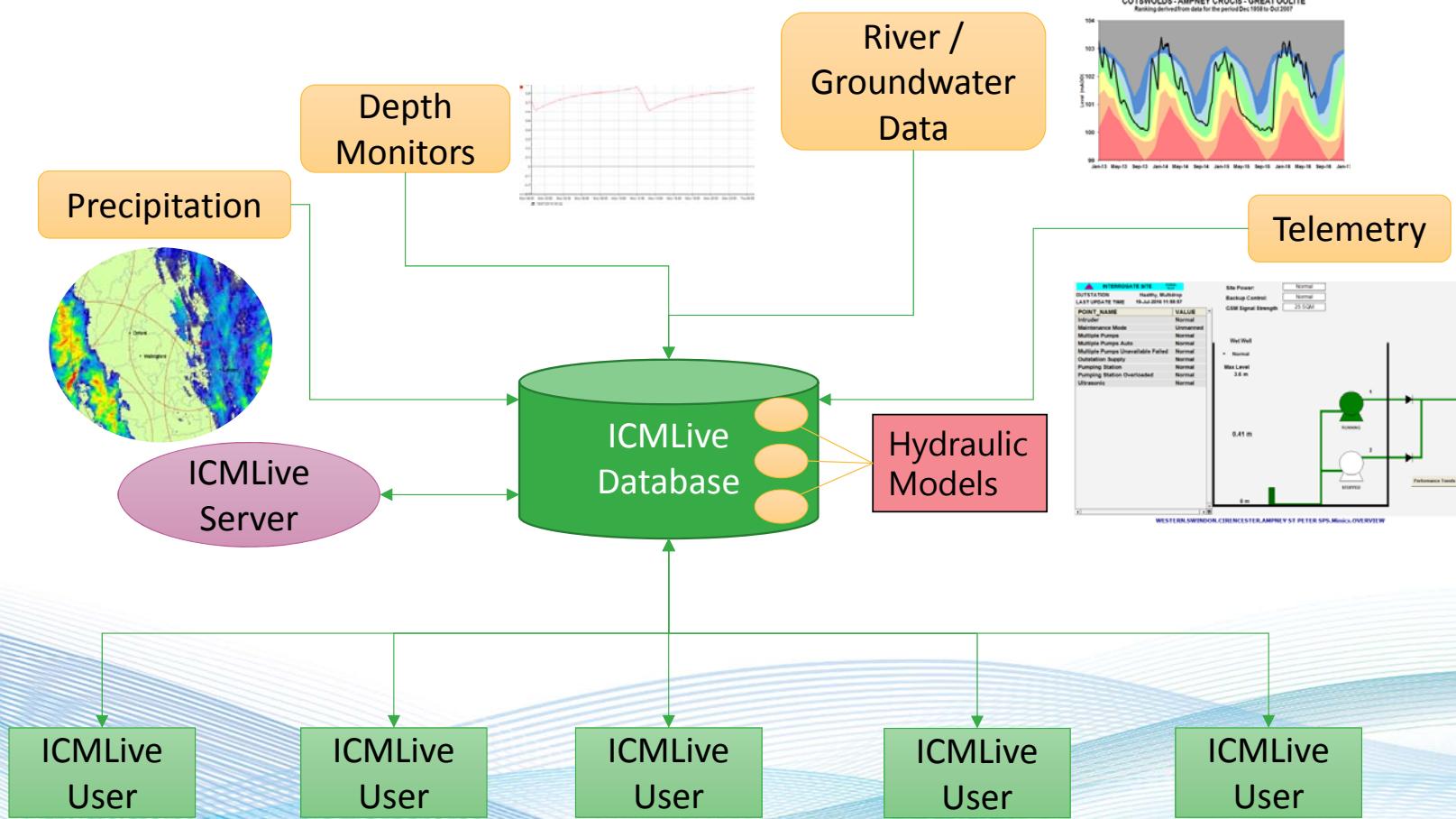


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How it works

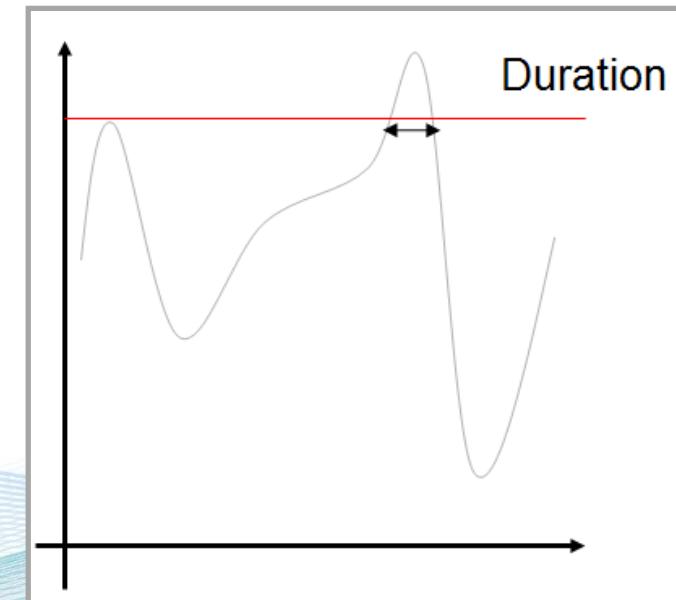
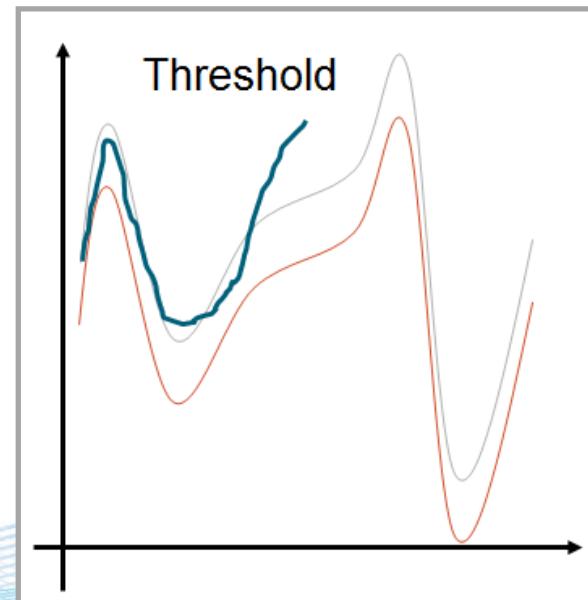
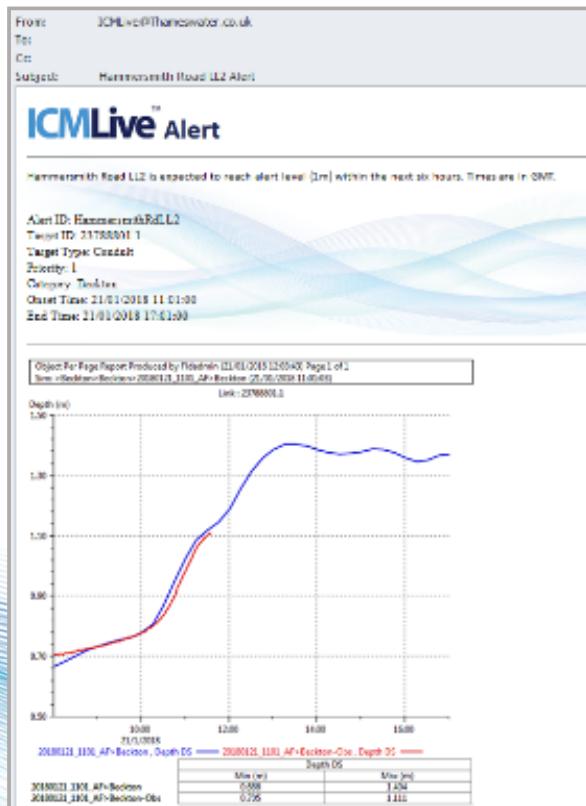


Digital twin: insight into what is happening



Alert Generation

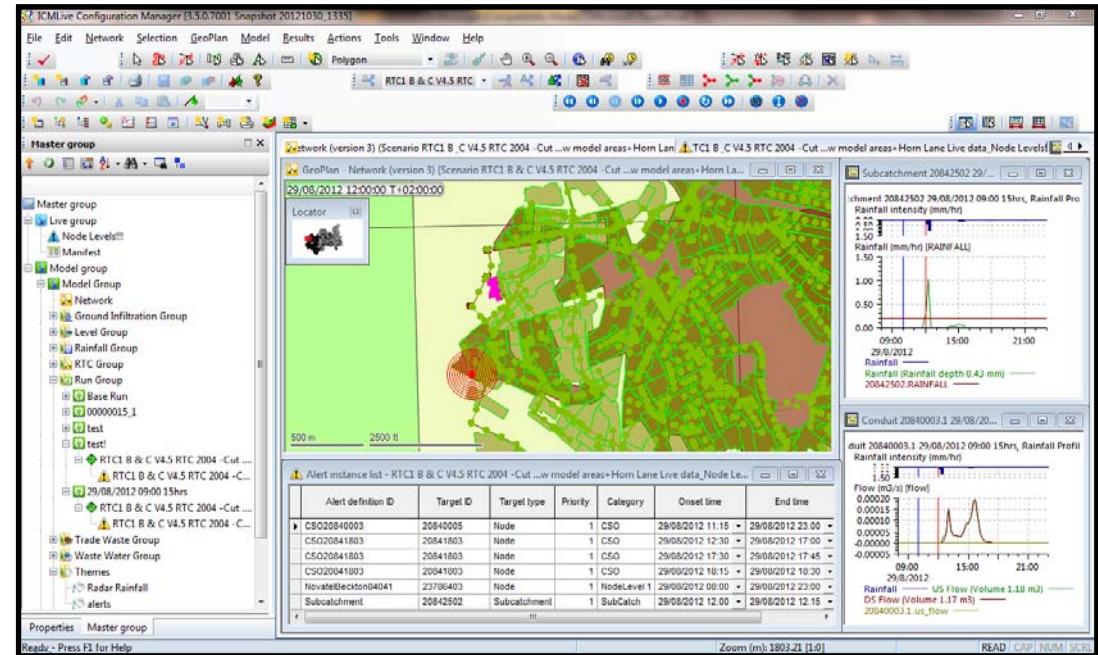
- Email alerts can be raised on results and predictions
- Rainfall, changes in depth and flows, duration of exceedance



From asset management to operational modelling

Digital twin:

- Asset inventory
- Connected asset model
- Offline hydraulic model
- Real-time monitoring
- Online operational modelling

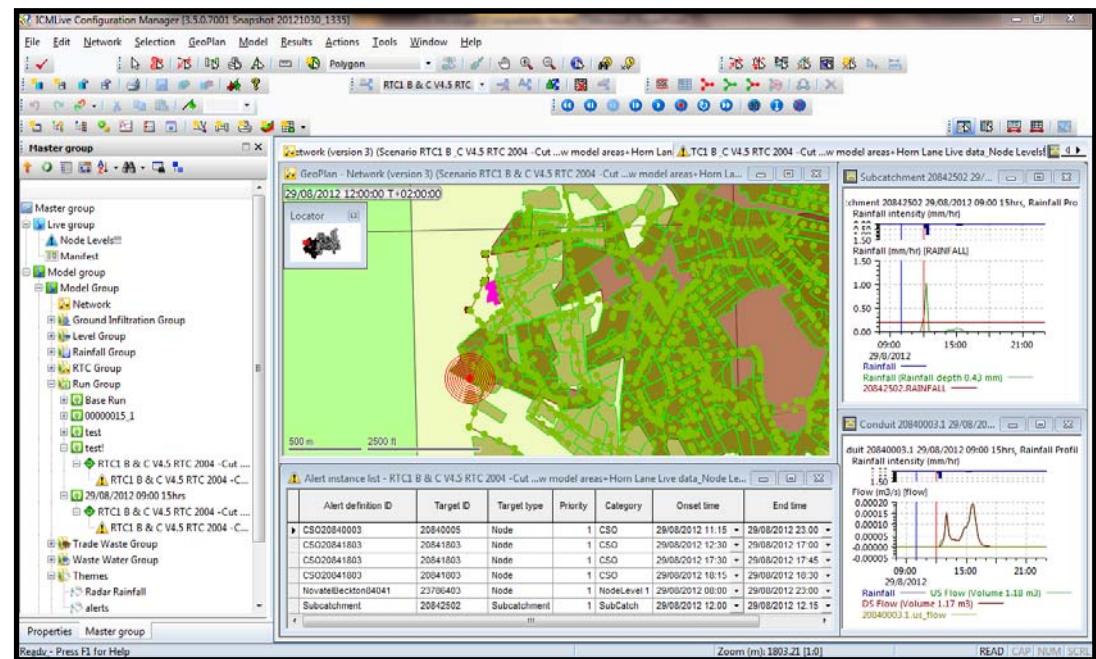


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Online operational modelling

InfoWorks ICMLive & InfoWorks WSProLive:

- Australia
- UK
- Netherlands
- Belgium
- China
- France
- Malaysia
-



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The operator's best friend?



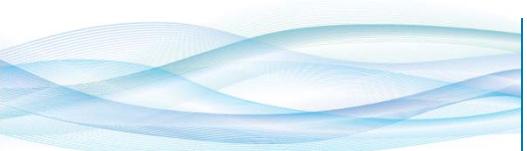
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