Delft-FEWS WEB OC Status update June 2022

Web OC Team
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2022/06/20

Outline

- Reasons for developing the Web OC

- Timeline – status update
  - Web OC
  - FewsWebServices

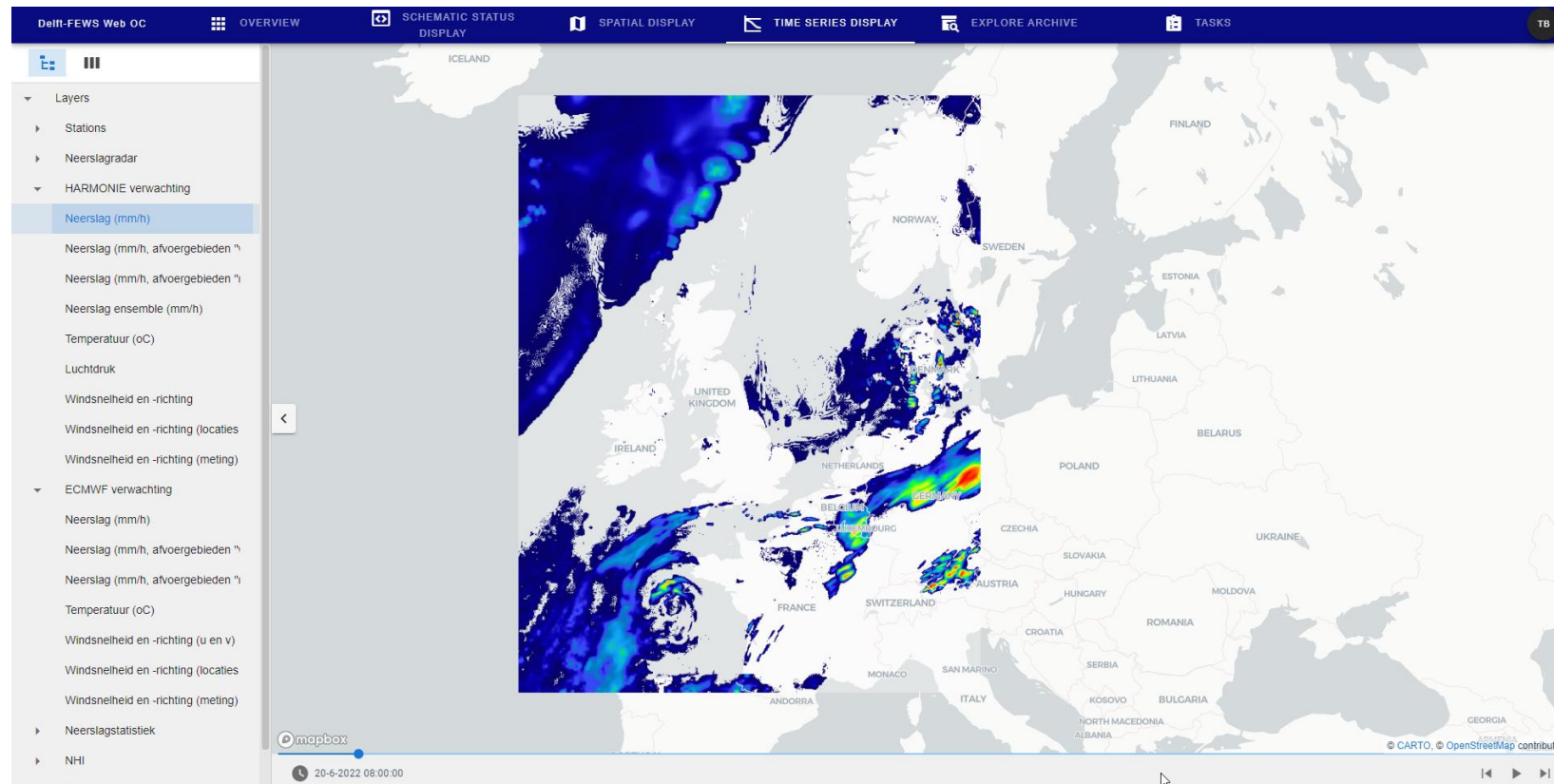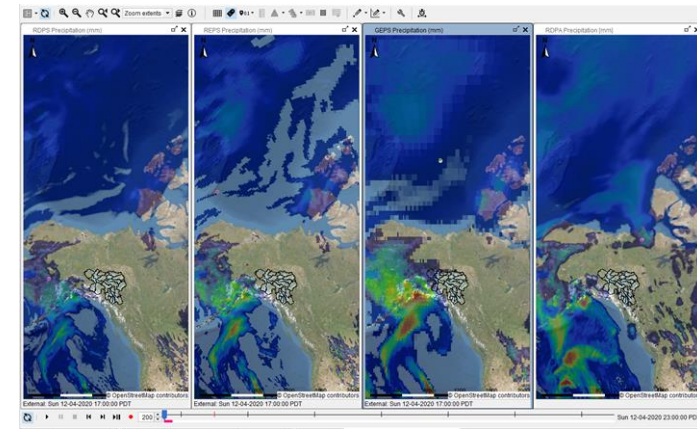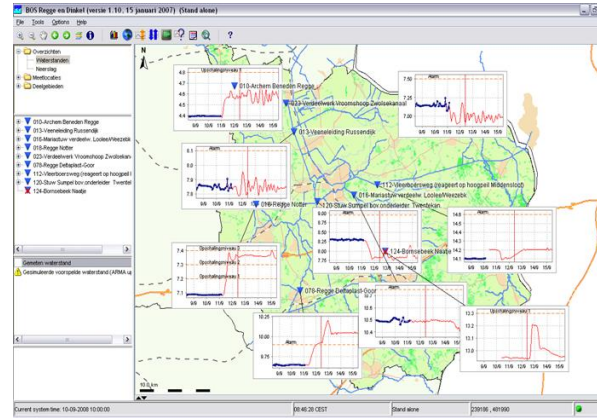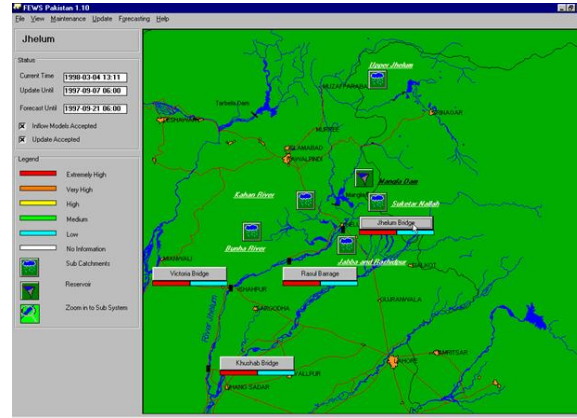- Use and re-use of Web OC building blocks
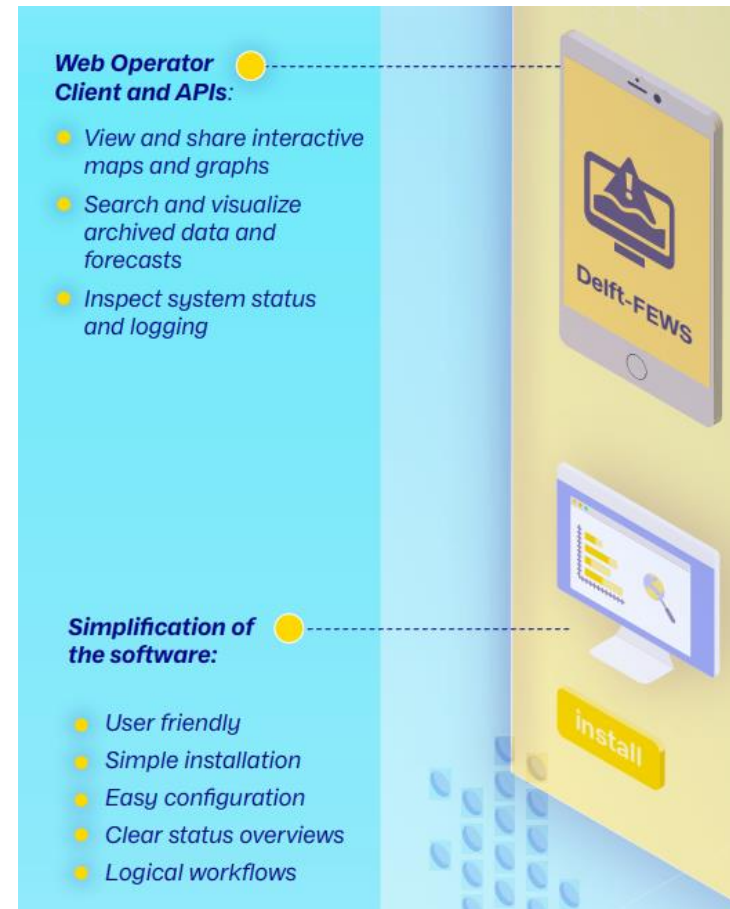
- Next steps

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Reasons for developing the Web OC

- Increased **mobility** (fast access through browser, also from mobile devices)

- Increased **flexibility** (the intention to have further options to customize the interface to user needs)

- Increased **modularity** (possibility to incorporate into existing online environments already in use by clients)

- **Technological** developments (benefit from all the technological developments and 3rd party functionality available for the web)

- **Easier deployment** (compared to Desktop OC)

- Improvements to **performance and security of Delft-FEWS web-services** in consequence of the development of a secure and performant Web OC

- Need from the international market to have a lightweight web interface as **part of the overall Delft-FEWS product**

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# Delft-FEWS Vision 2025

https://oss.deltares.nl/web/delft-fews/vision-2025

Timeline – status update

Q4 '20:   International User Days presenting Web OC plans: Vision 2025

Q1-Q3 '21:   Define use-cases and key assumptions and MVP

First steps towards technical architecture: Involve both Deltares and external collegues

Budgetting MVP

Q4 '21:   Development Sprint 1
Development Sprint 2

Q4 '21:   International User Days presenting Web OC progress

Q1 '22   Third party testing of reusability Web OC building blocks

Q1 '22   Development Sprint 3

Start with UX/UI Design

Q2 '22   Development Sprint 4

Q2 '22:   NL User Days presenting Web OC progress

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Key starting points

Key technical starting points as presented during 2020 and 2021 User Days:

- The Web OC will connect to the **Delft-FEWS web services** to interact with other Delft-FEWS components.

- The Web OC will serve **expert users** primarily.

- Web OC will **not be a clone of thick Client** regarding functionality and design.

- The Web OC will be a **responsive web application**, building on experience gained in prior web applications developed by Deltares

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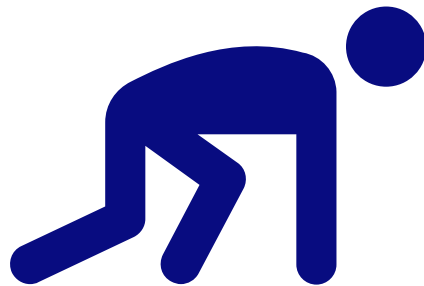
Summary of key MVP features

Functional:

- Visualize data (time series, map fields, SCADA displays, also including associated information such as thresholds and attributes)
- Dispatching jobs, Visualize monitoring information

Non-functional:

- Security, Performance, Testing, release management, Configurability*

Which key functionality should an Minimum Viable Product (MVP) version of the Web OC provide?

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| Spatial display	time series, SSD and WMS	Visualising Data and forecasts
Data viewer, including predefined plots and spatial data,	Threshold crossings	Pre defined Display Groups
XML configuration	visualisation of time series	Forecast times

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FewsWebServices improvements

Work carried out thus far: improvements to **performance and security of Delft-FEWS web-services** in consequence of the development of a secure and performant Web OC
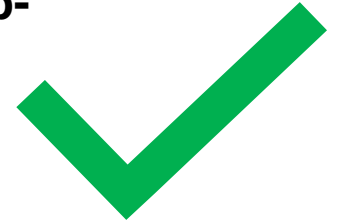
*During design and development, present day insights and requirements regarding **cyber security** will be adhered to from the start.*

- Web OC equivalent of Topology nodes: GET Topology nodes
- Visualize display groups on the Web: GET Display groups
- Extend WMS getCapabilities regarding data availability
- Automated ZAP scan on OWASP security risks
- Authentication/Autorization: Delft-FEWS WebService support for Open ID Connect (PI/SSD/WMS)
- Proper versioning of endpoints
- Implement JSON schemas for new PI REST endpoints
- XML schemas for fewsWebServices property configuration
- OpenAPI specification response for endpoints
- Steps taken towards continuous deployment of fewsWebServices
- Integration testing using Postman test collection
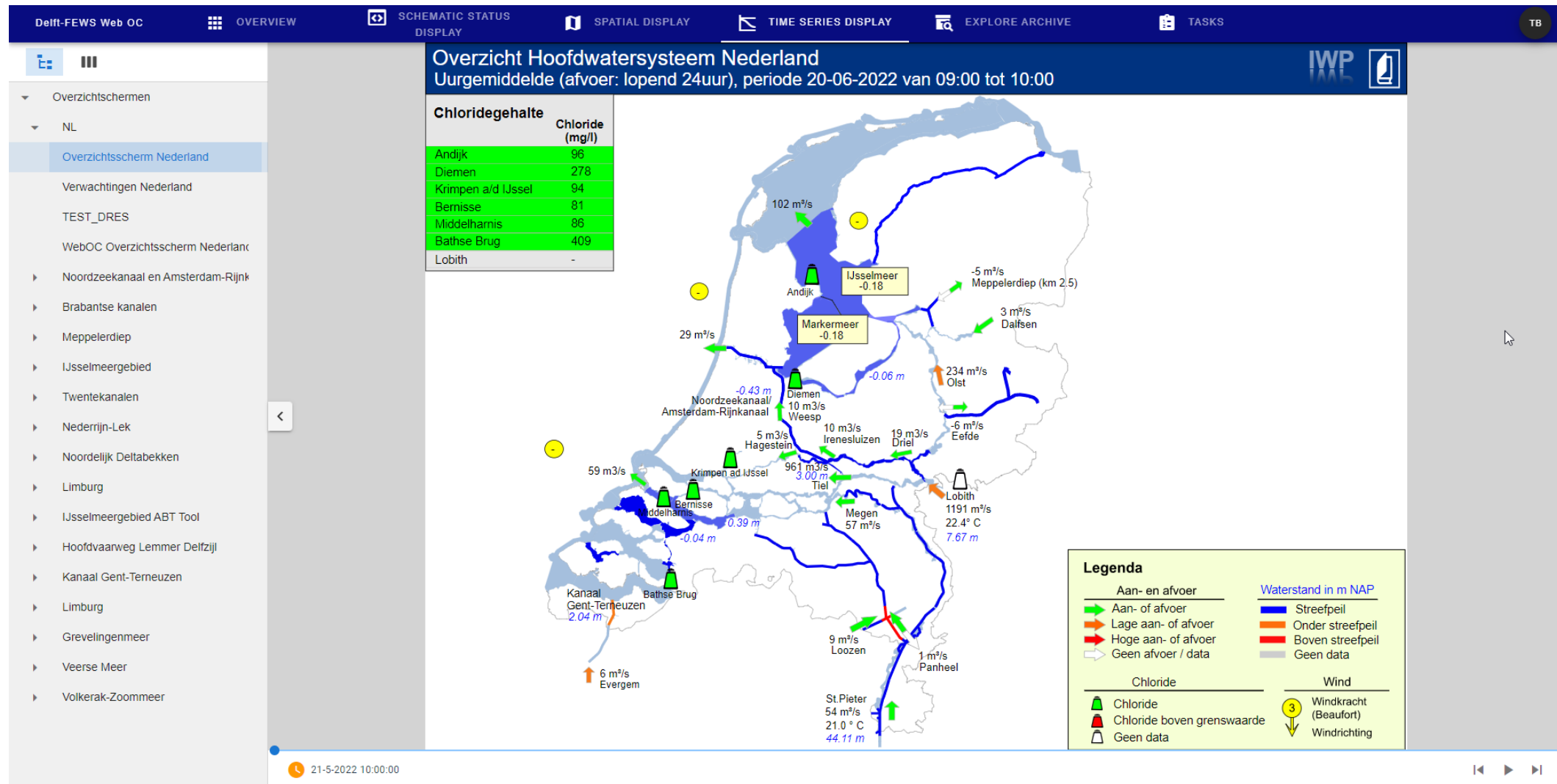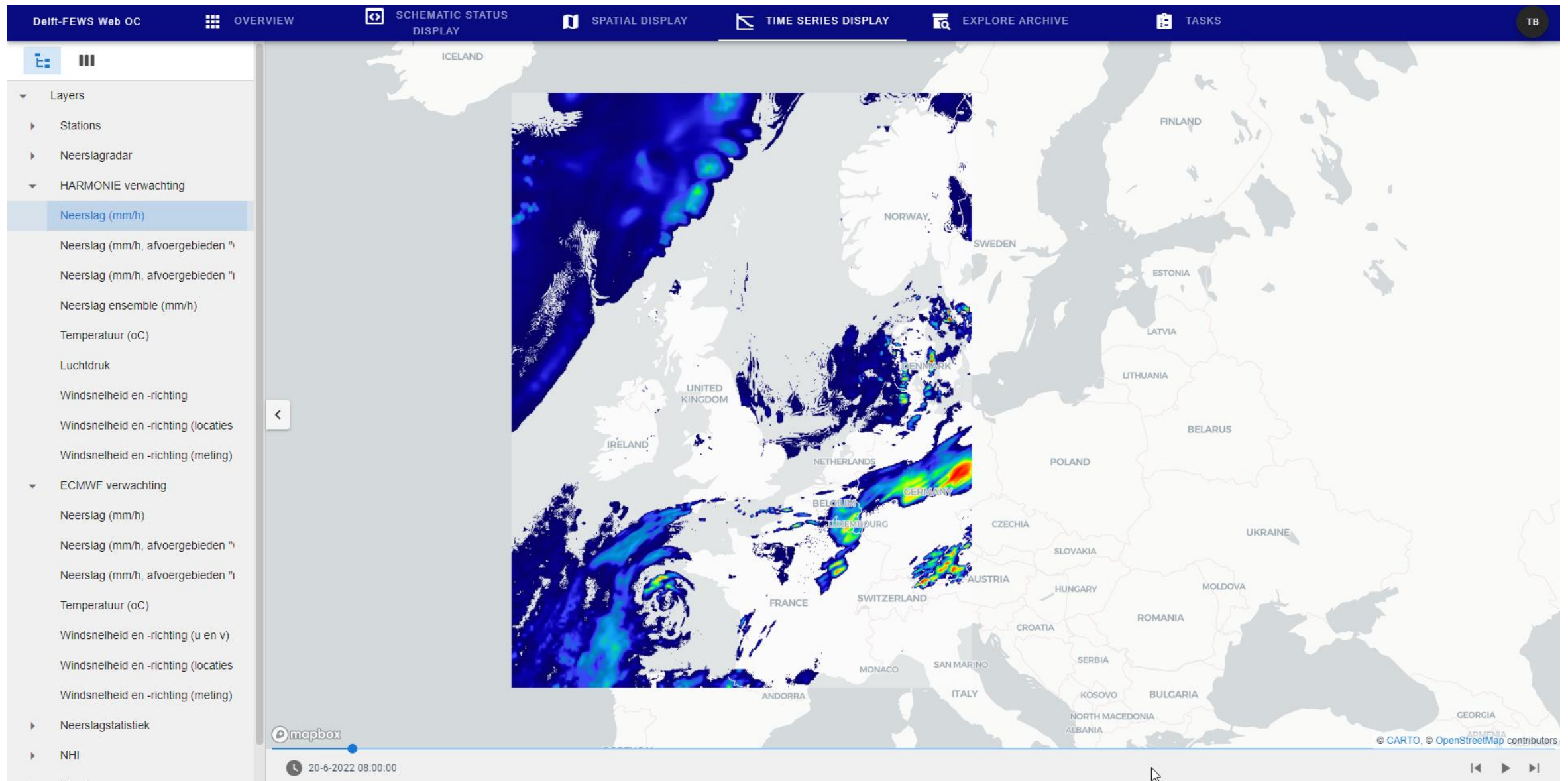
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MVP – Web OC Sign in
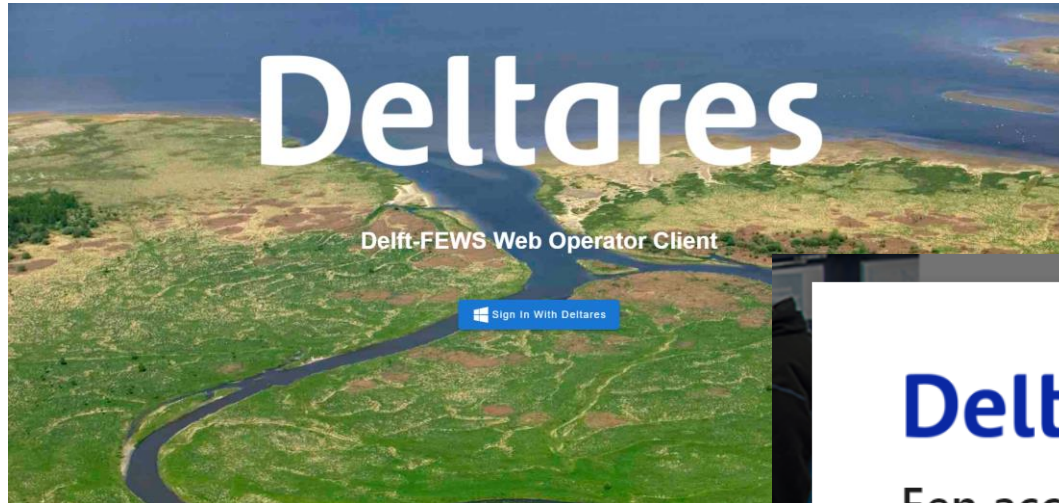
- Using OpenID Connect / Oauth2, for both Web OC front-end and fewsWebServices
- FEWS permissions respected by FewsWebServices
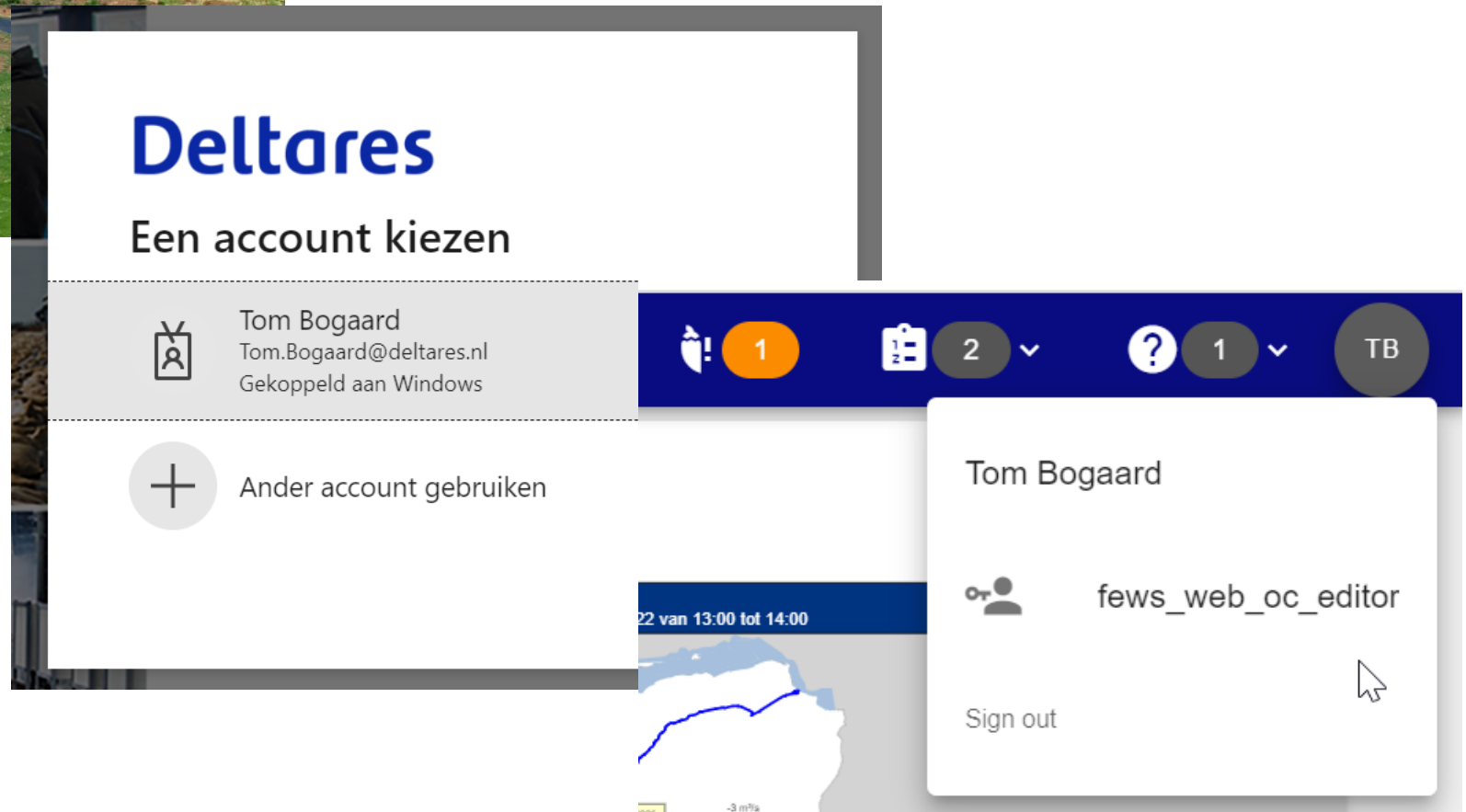
MVP – Schematic Status Display

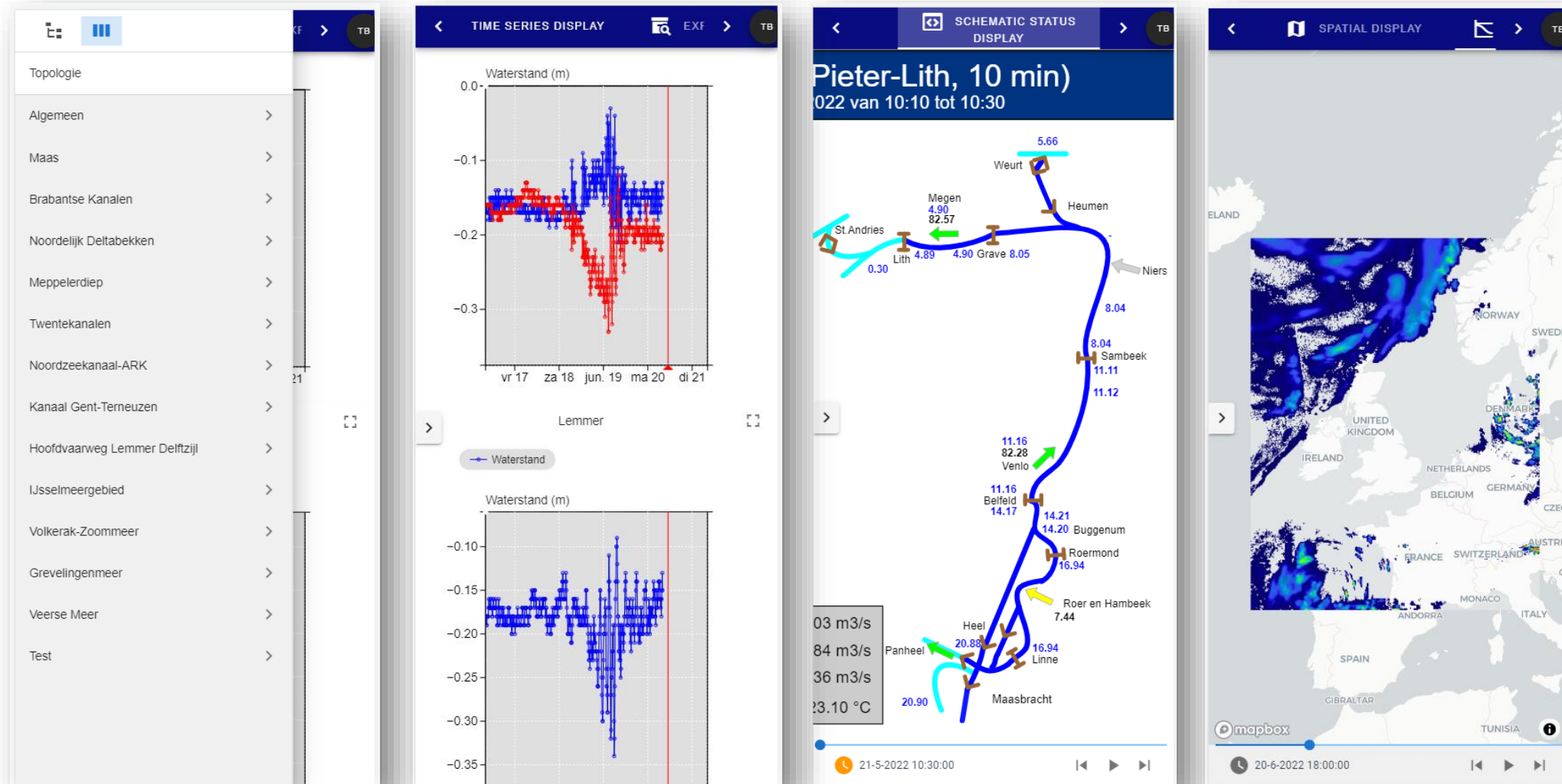# MVP – Spatial Data

MVP – Topology / DisplayGroups

MVP – Topology / DisplayGroups

MVP – Responsive design

- The Web OC will be a responsive web application → MVP focus on Desktop use.

MVP - Next steps

Spatial data
- Show data availability

Graphs
- Display Groups linked to Topology
- Data browser / Filters

Installation
- Provide Plug-and-Play Web OC package for beta-testers.
- embedded PI Service for testing purposes in 2022.02

UX / UI DESIGN
- Input from User Day sessions
- building on experience inside and outside Deltares
- Interviews (Martijn Kwant)

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(Re)using

Various use cases with regard to use and re-use of Web OC building blocks:

Front-end viewer

Option 1: use the entire Web OC stack

Fews web oc components

Option 2: re-use web OC components as well as libraries in your own web applications connected to FEWS. Or use components as a reference for your own implementation in non-Vue.js frameworks.
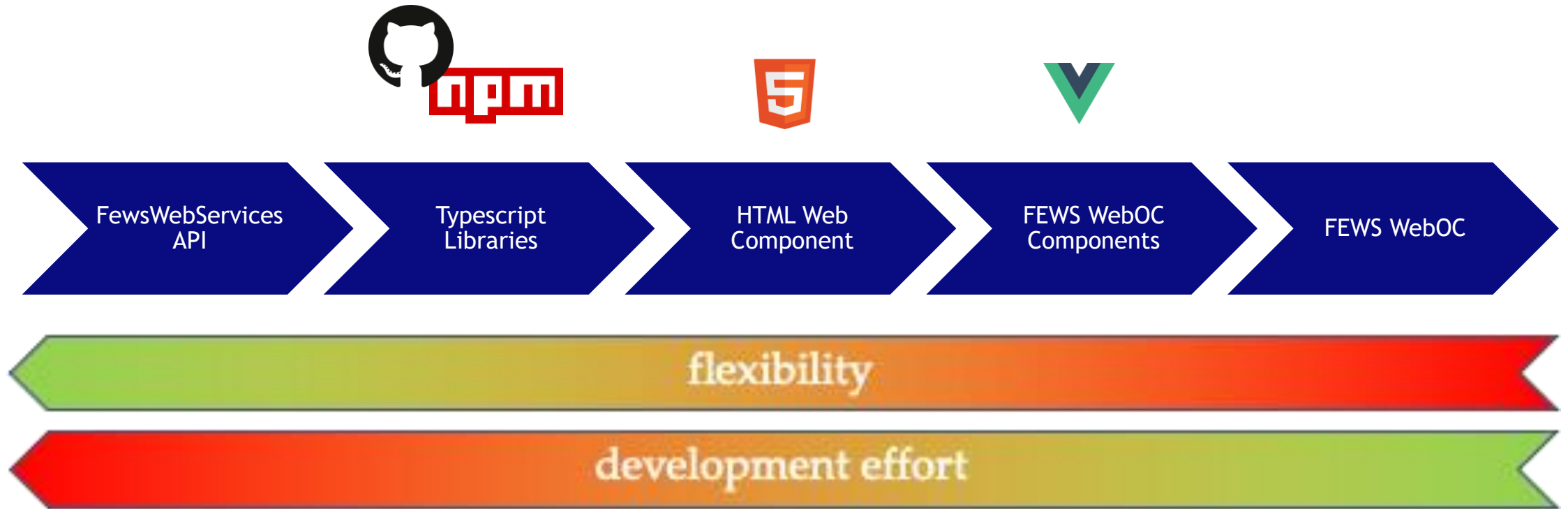
Typescript libraries (eg: timeseries request, wms request)

Option 3: re-use libraries in your own web applications connected to FEWS.

fewsWebServices

Option 4: develop your own web applications on top of fewsWebServices, without using any further Web OC libraries or components.

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Third-party collaboration

| FewsWebServices API | → | Typescript Libraries | → | HTML Web Component | → | FEWS WebOC Components | → | FEWS WebOC |

flexibility

development effort

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Next steps

Q3-Q4 '22   **Finish Prototype Web OC Components** Spatial Display, SSD and DisplayGroups available. Plug-and-Play.

Q3 '22   UI/UX Interviews

Q4 '22   UI/UX implementation Sprint - pending budget: design, implementation

Q4 '22   **Beta testing**: Prototype Web OC Components Spatial Display and SSD.

Q4 '22   Development Sprint# - pending budget: goal to finish MVP in 2022

Q1 '23   Ready for dedicated Web OC Implementations

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Questions?

After this meeting:

1. Contact Tom Bogaard (tom.bogaard@deltares.nl) or Daniel Twigt (daniel.twigt@deltares.nl), or
2. Contact FEWS PM (through the regular channels)