Graphical forecast editing in collaborative web environment

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Software Tester

EGOWS
Reading, United Kingdom, 15th-17th October 2018

The problem(s)

- Time-consuming filling of MS Word forms
- Repetitive writing of the same text
- Drawing maps in MS Paint
- Lack of work automation
- A lot of forecasted areas
- More than one office contributing

Technologies used

- **HTML5**
- **JavaScript** (TypeScript, Angular)
- **Leaflet JS**
  - Open Street Map
- **Websockets**
  - To see what other regions are doing in “real-time”
  - Exchange of drawing events between client browsers and VW server
- **Visual Weather**
  - Back-end web services
  - NWP guidance (dedicated Python WS using Grid Processor)
  - Production (Message Editor -> Pipeline Editor)

Collaborative weather prediction

Why do we need map collaborative tools:

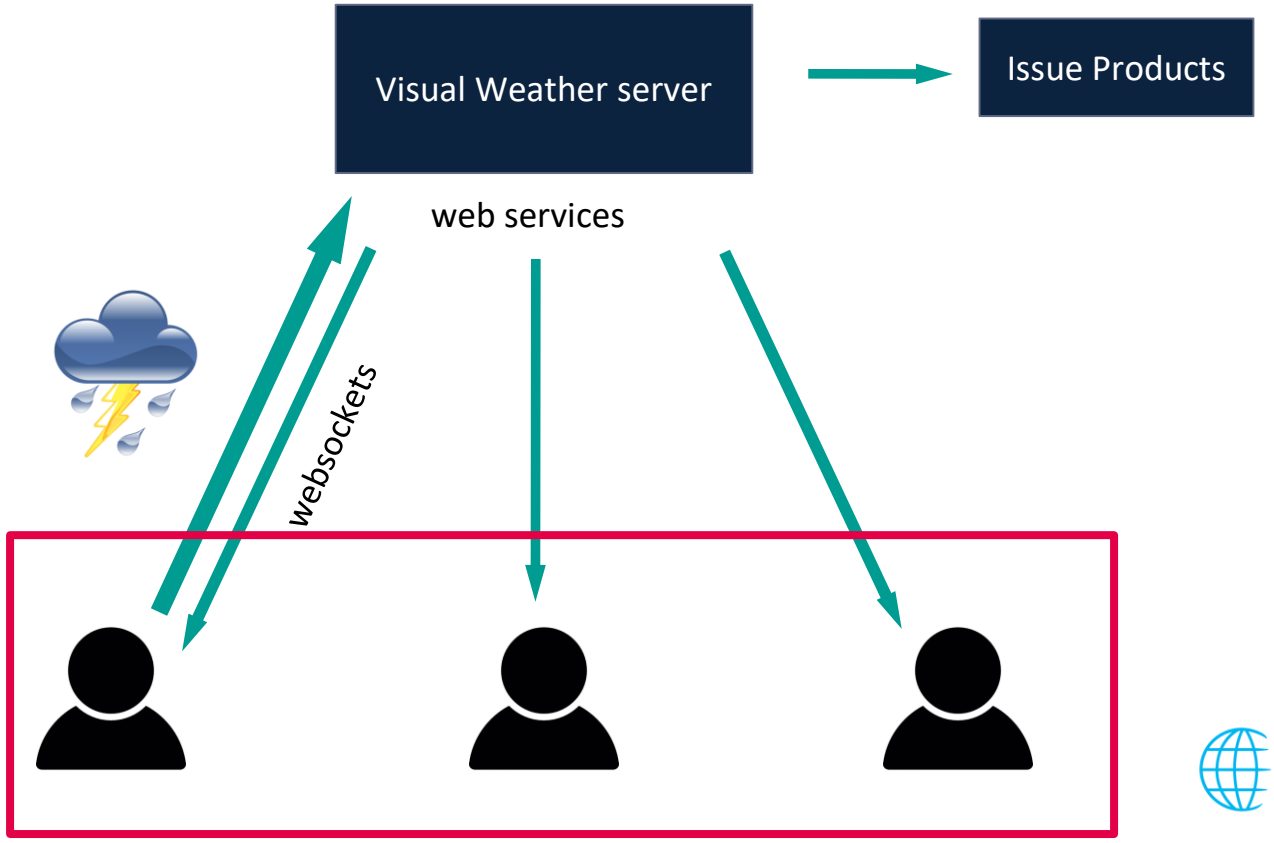
- Weather “does not respect” state boundaries.
- Geographic consistency of alerts and forecasts.
- Aviation – flights cross multiple FIRs.
- Time-saving replacement of form-based system.

Why online solution:

- Easy to deploy & maintain,
- Minimal problems with compatibility for collaboration.
- Easy to access from any location/office.

Weather Drawboard – Forecast Editor

- Users do not communicate with each other, but with server via web services.



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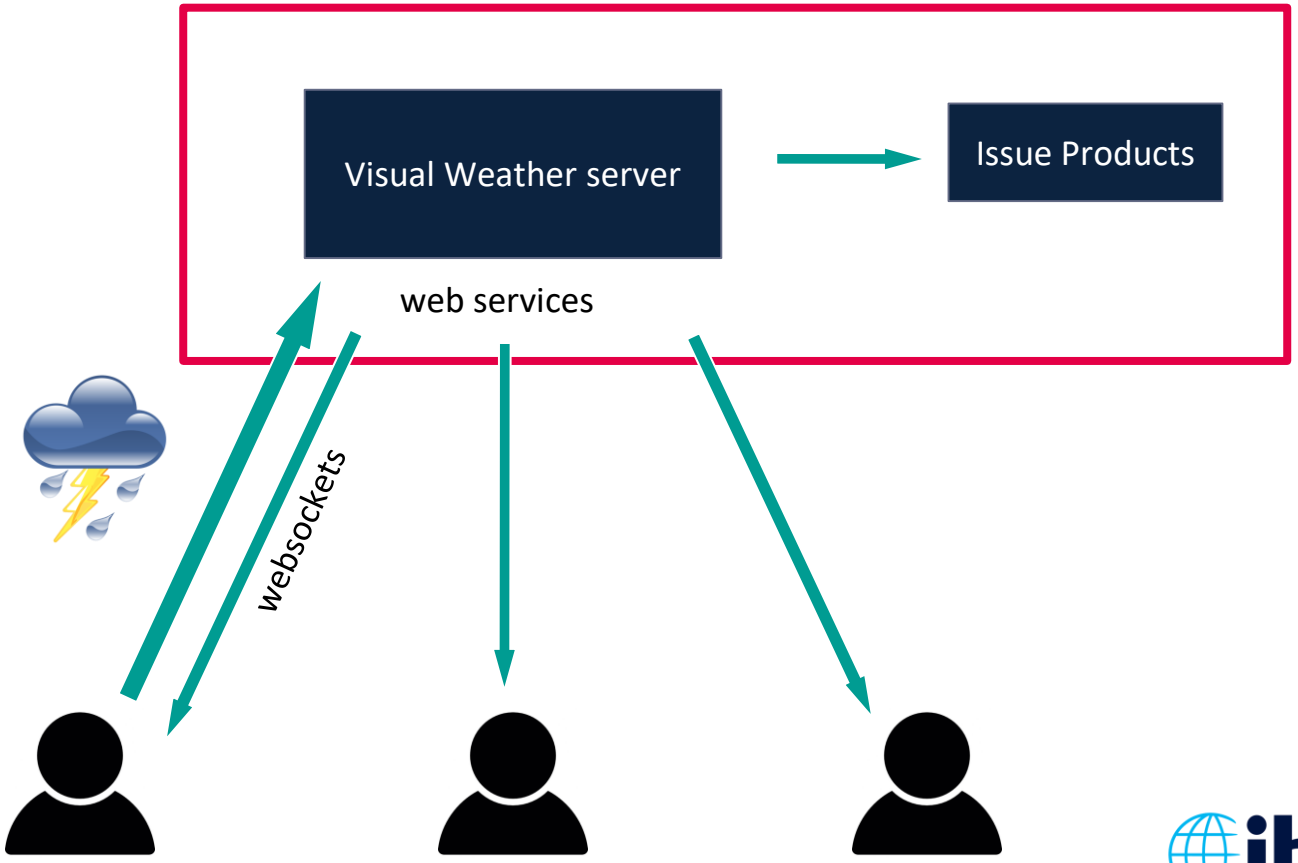

Product examples

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KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI

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Tel: 6-082-617737
Fax: 6-082-617730
E-mail: rfokuching@met.gov.my
Web Site: www.met.gov.my

Date: 10 October 2018
To: WBGB, WBGR, WBGS
Subject: General Weather Forecast for Coastal Waters off Sarawak from 0500 UTC 10 October 2018 to 0500 UTC 11 October 2018

Weather: Morning: Occasional rain and windy.
Afternoon: Intermittent thunderstorms, occasionaly intense.
Night: Clear sky without rain.
Wind: Northwesterly (20 km/j)
Sea conditions: 5-10 m

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Preview

WRNG 11:26PM 10/10/2018: T/storms,hvy rain&strg winds xpcted over Phg (Lpis, Raub, Jrntut & Tmrloh) until 2:00AM 11Oct2018.

JABATAN METEOROLOGI MALAYSIA
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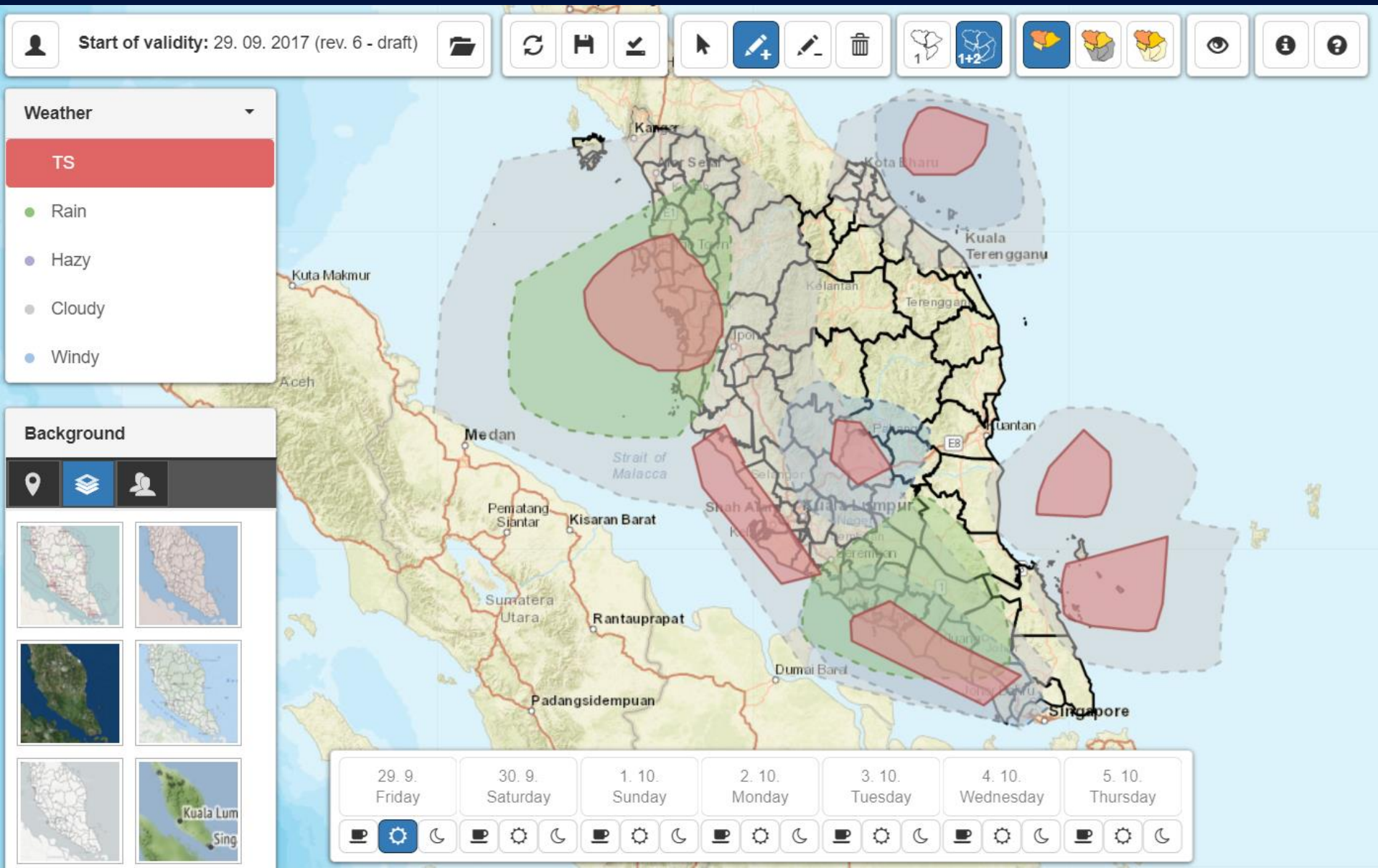
Ribut petir **sehingga 6:00 petang, 10 Oktober 2018**

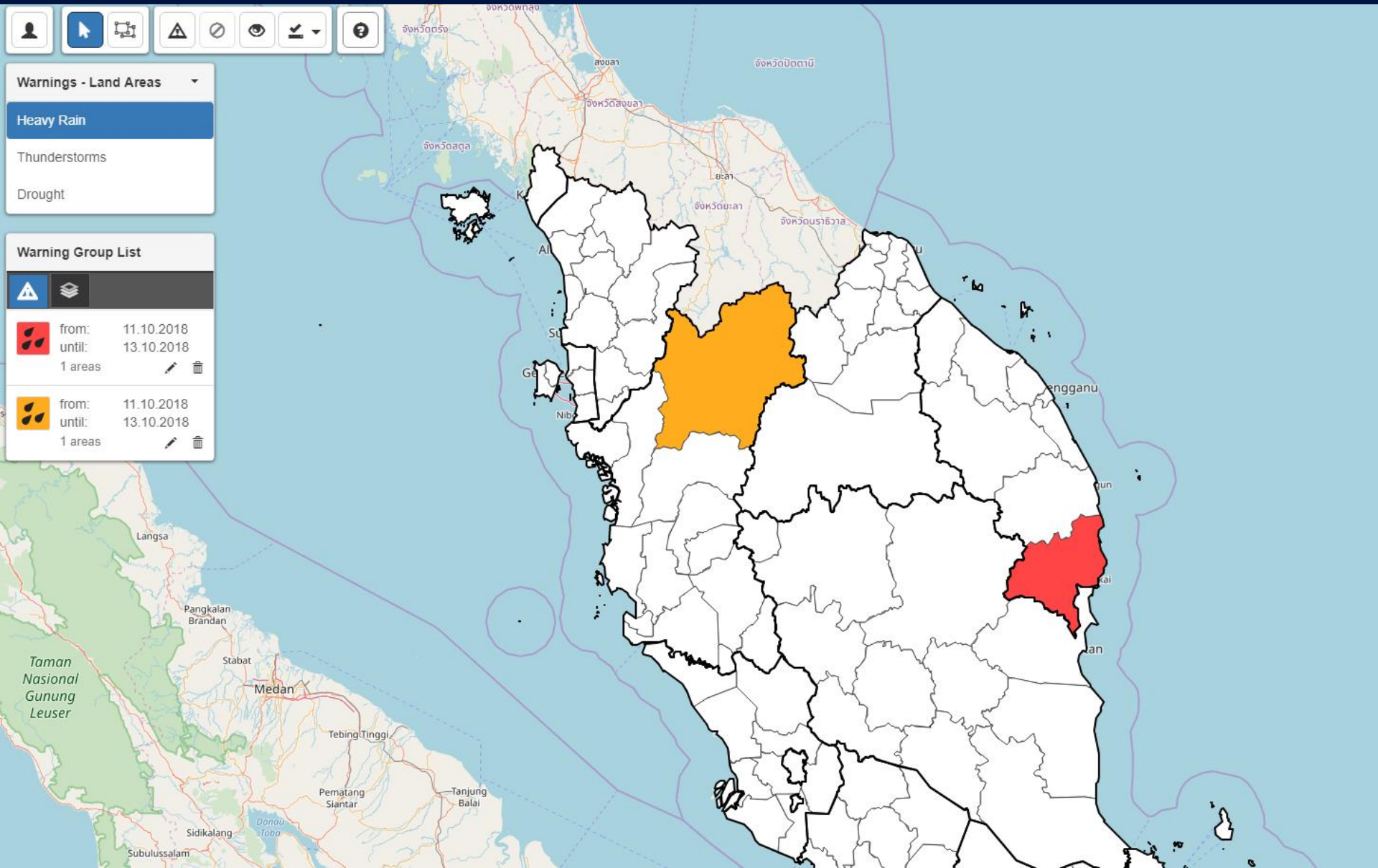
Kedah (Kuala Muda, Kulim dan Bandar Baharu) • **Pulau Pinang** • **Perak** (Kerian, Larut, Matang Dan Selama, Manjung, Perak Tengah, Bagan Datuk, Hilir Perak, Batang Padang dan Muallim) • **Terengganu** (Kuala Nerus, Hulu Terengganu, Marang, Dungun dan Kemaman) • **Pahang** (Raub, Bentong, Temerloh, Maran, Kuantan, Bera, Pekan dan Rompin) • **Selangor** • **WP Kuala Lumpur** • **WP Putrajaya** • **Negeri Sembilan** • **Melaka** • **Johor** (Tangkak, Segamat, Muar, Batu Pahat, Pontian, Kulai dan Johor Bahru)

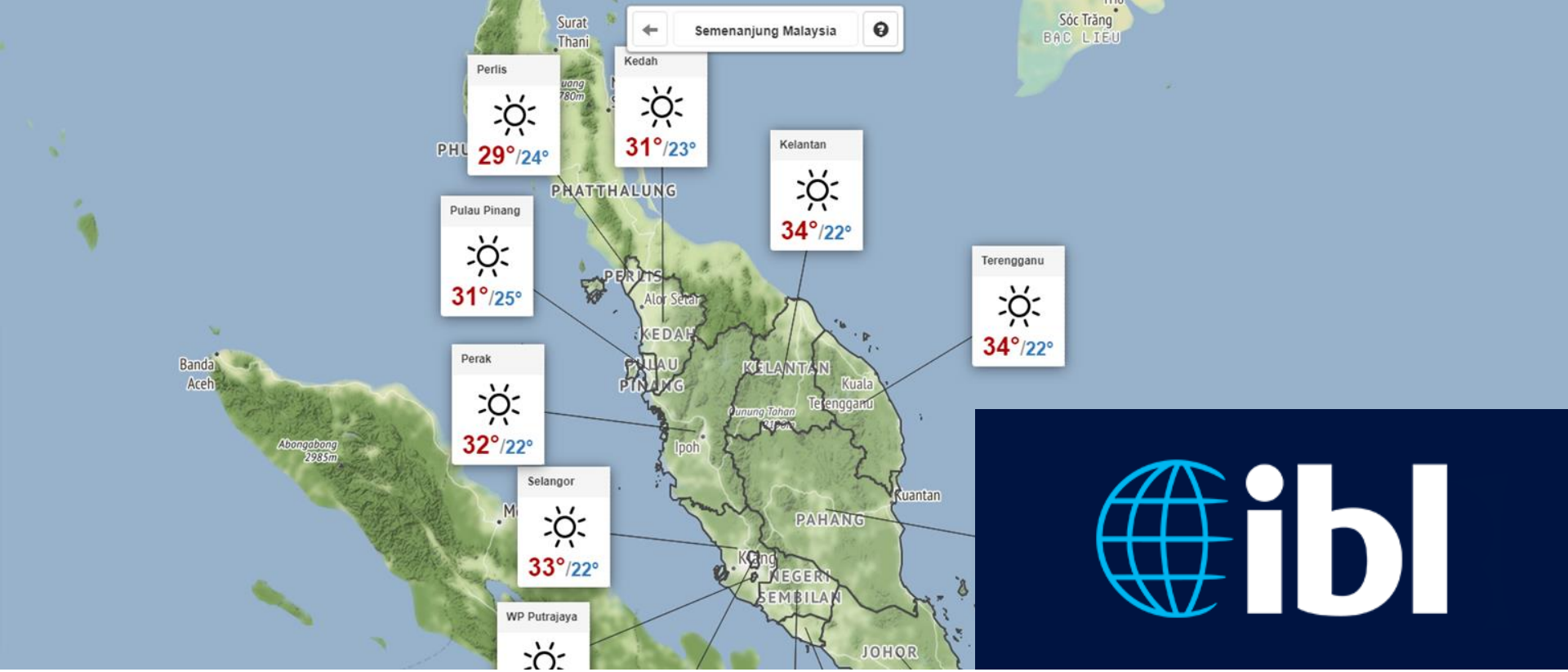
Pada waktu yang sama, kawasan pantai dan muara sungai bagi negeri Kedah, Pulau Pinang, Perak, Selangor, Negeri Sembilan, Melaka dan Johor terdedah kepada kesan kenaikan paras air laut.

Weather Drawboard - Forecast Editor



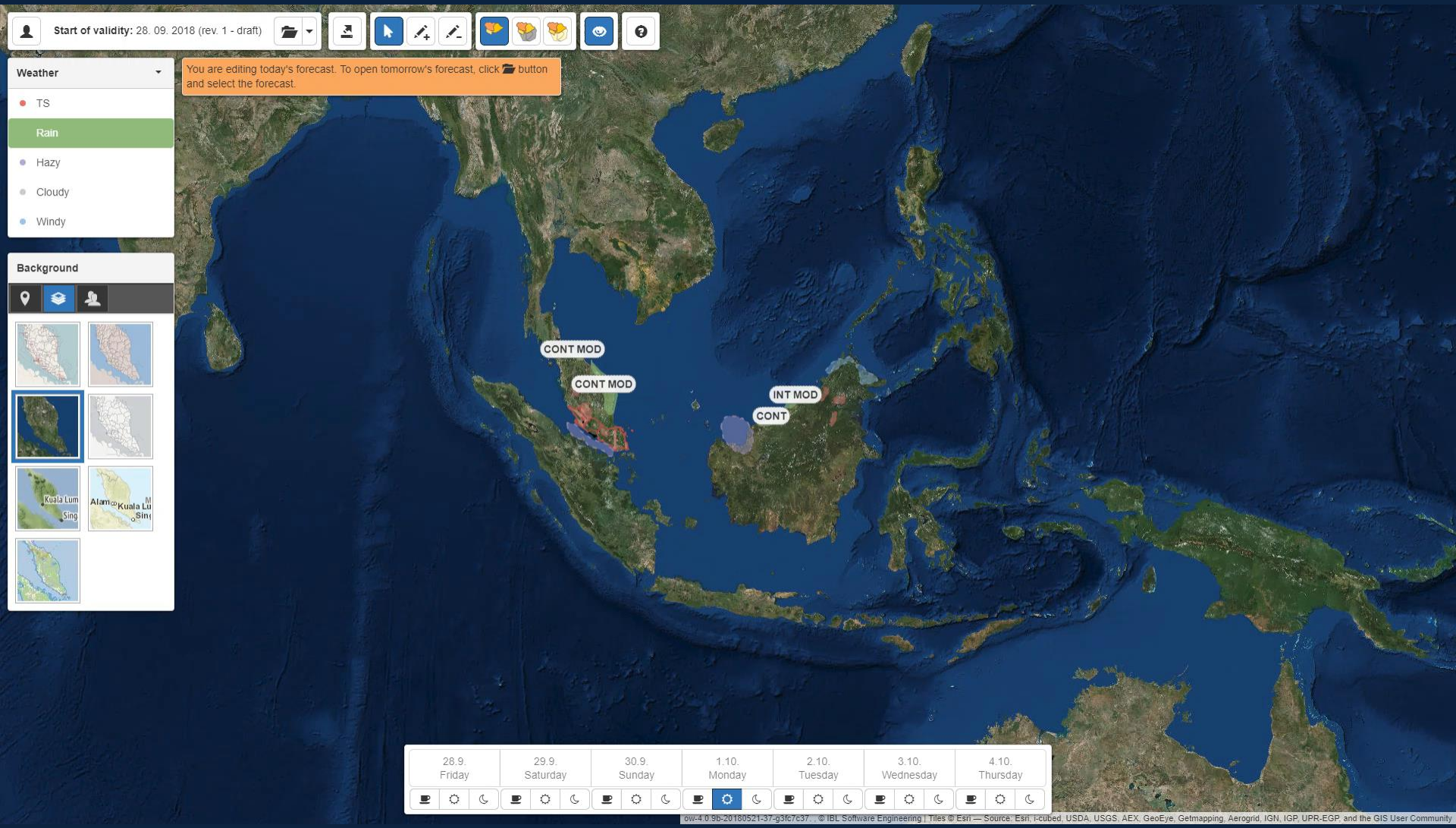
Weather Drawboard - Alert Editor





Demonstration of Weather Drawboard

WDB Forecast Editor



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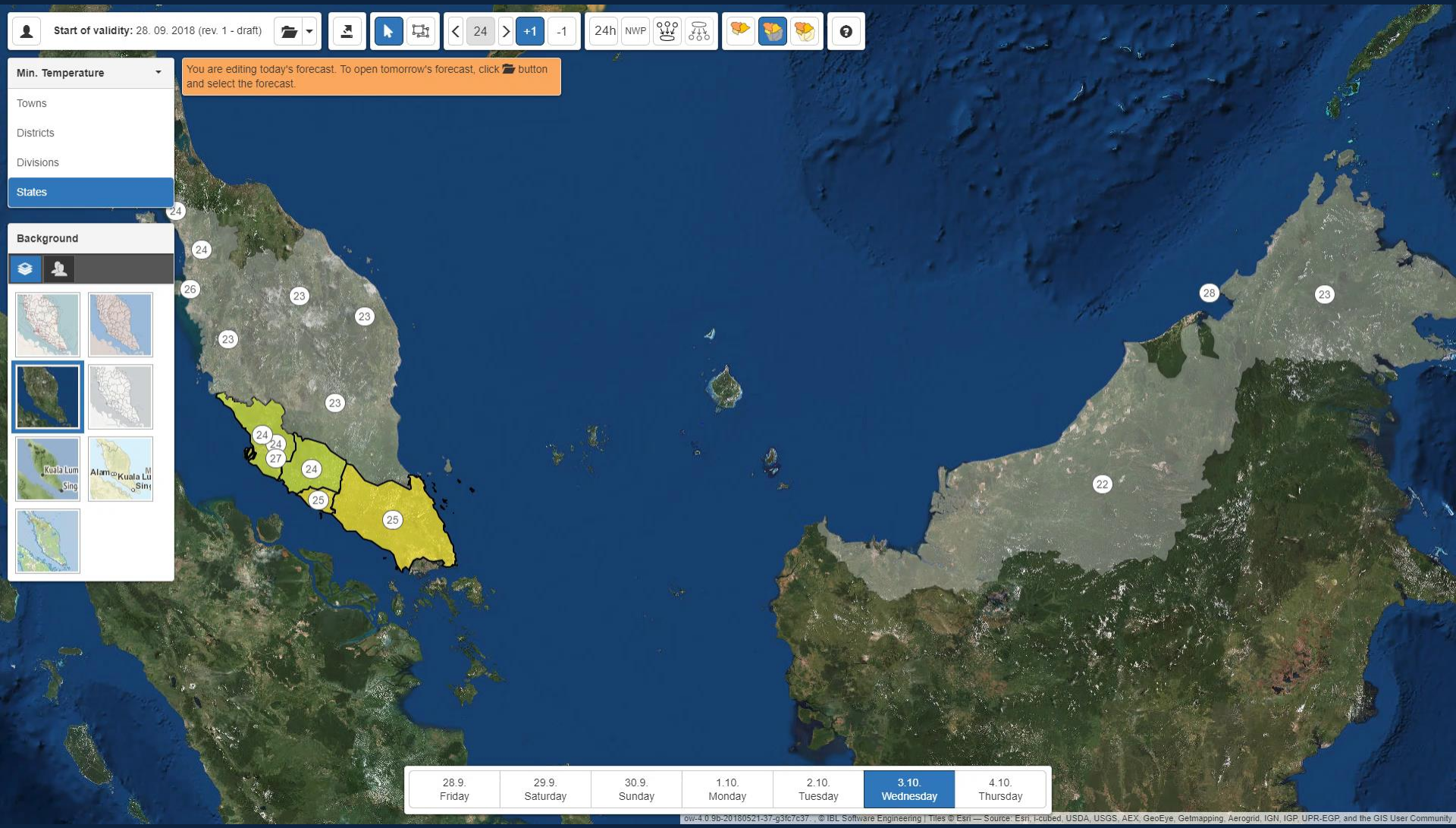

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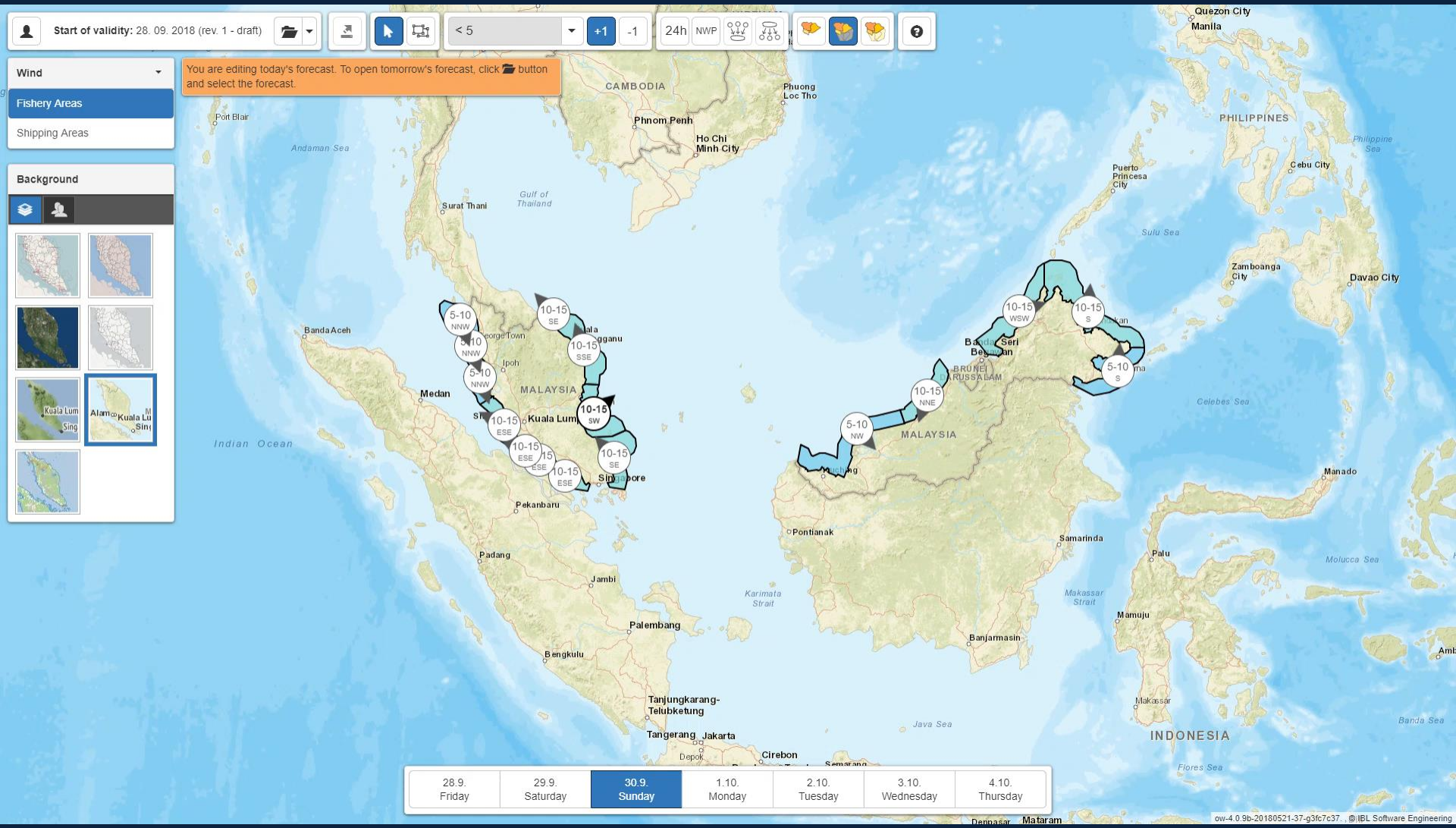
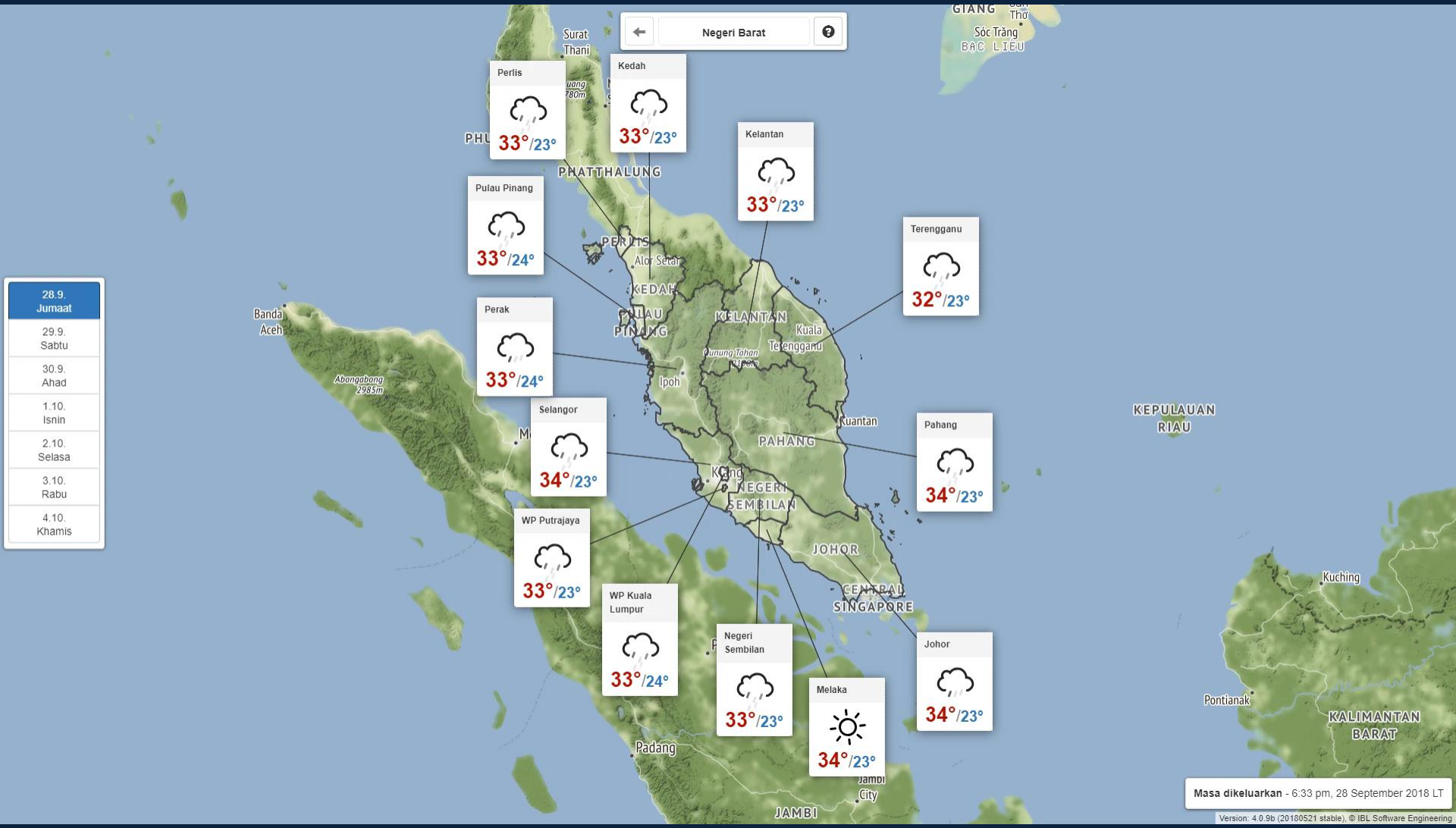


WDB Forecast Viewer



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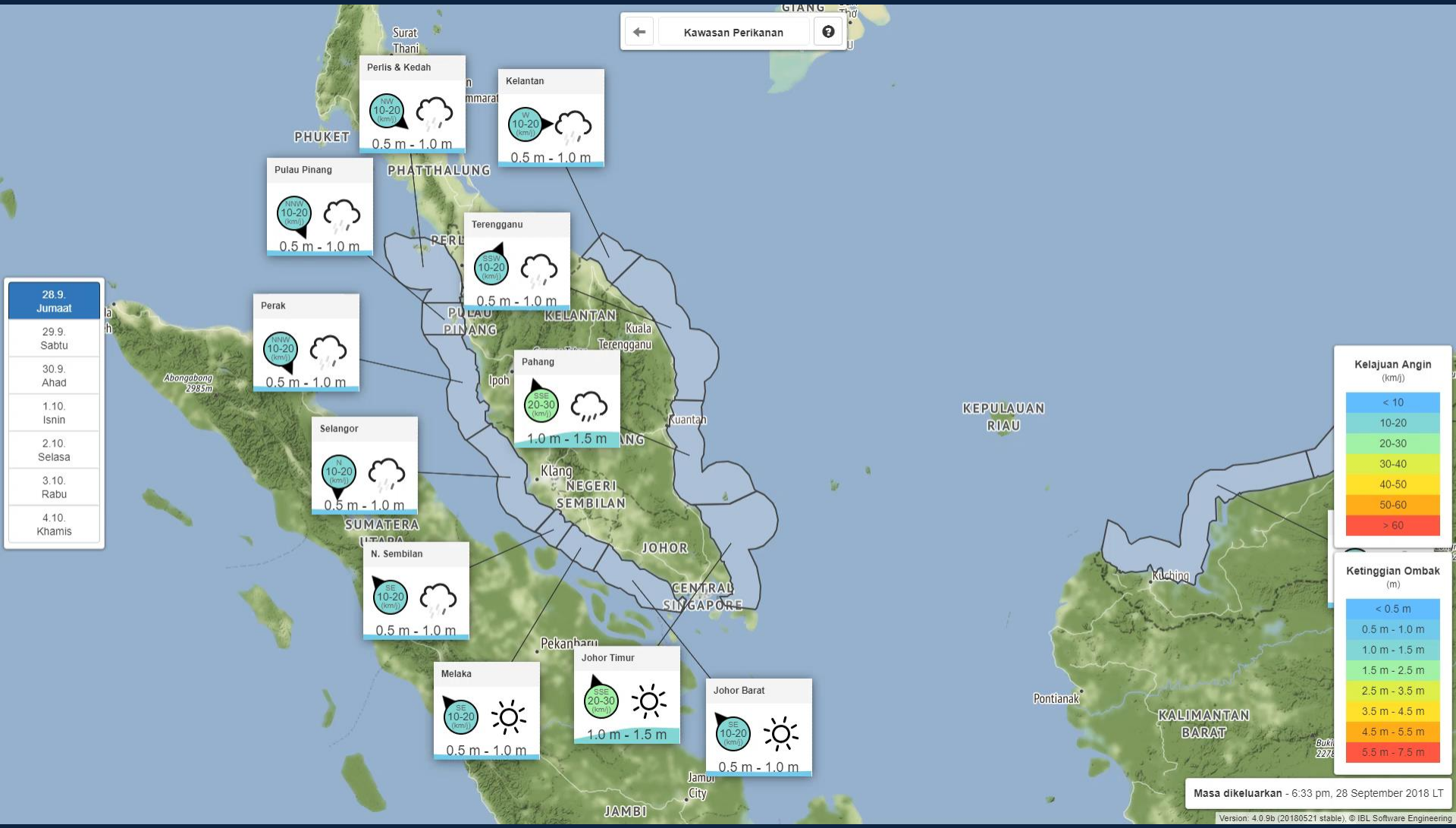
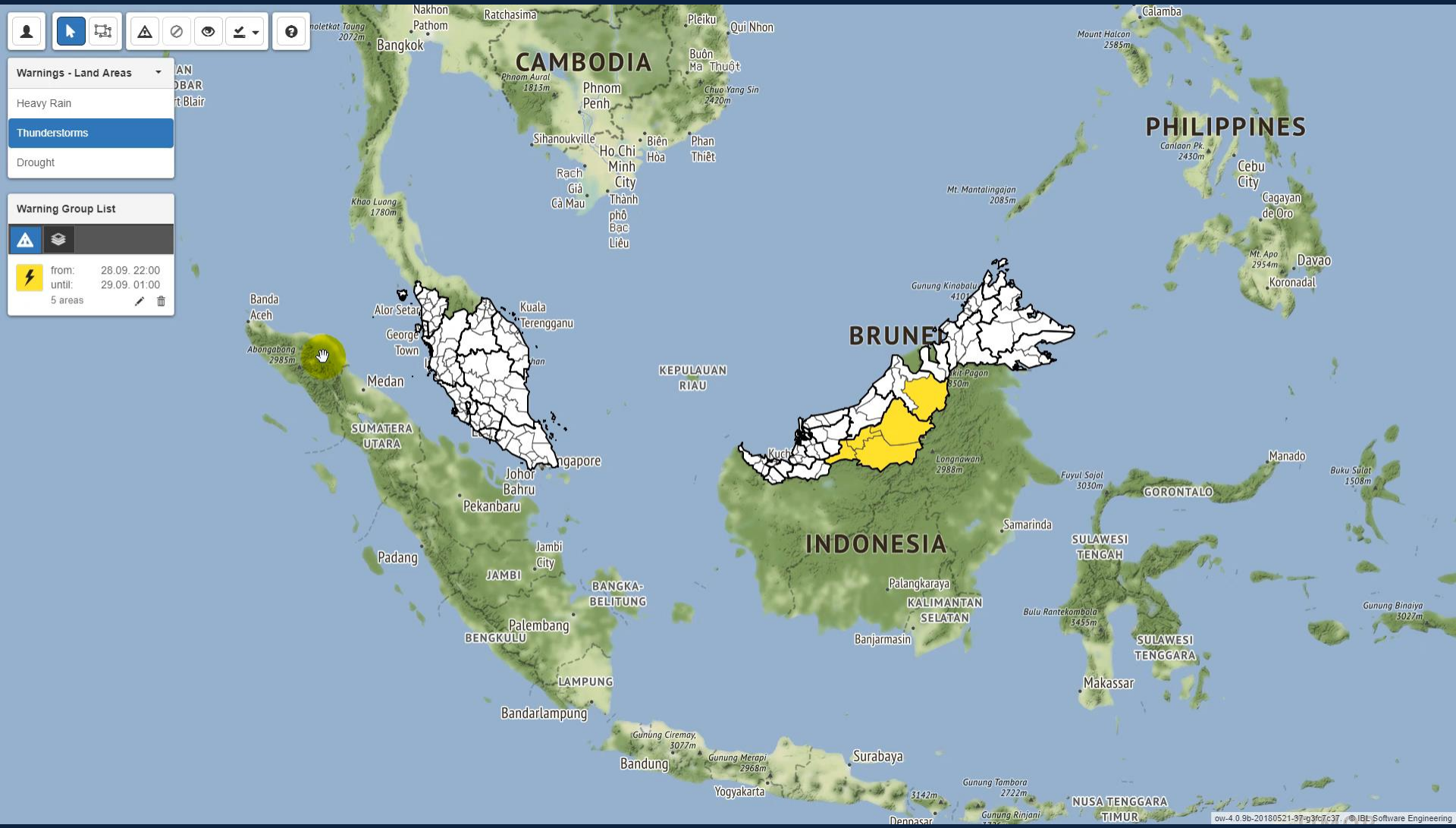


WDB Alert Editor



Challenges encountered or lessons learnt

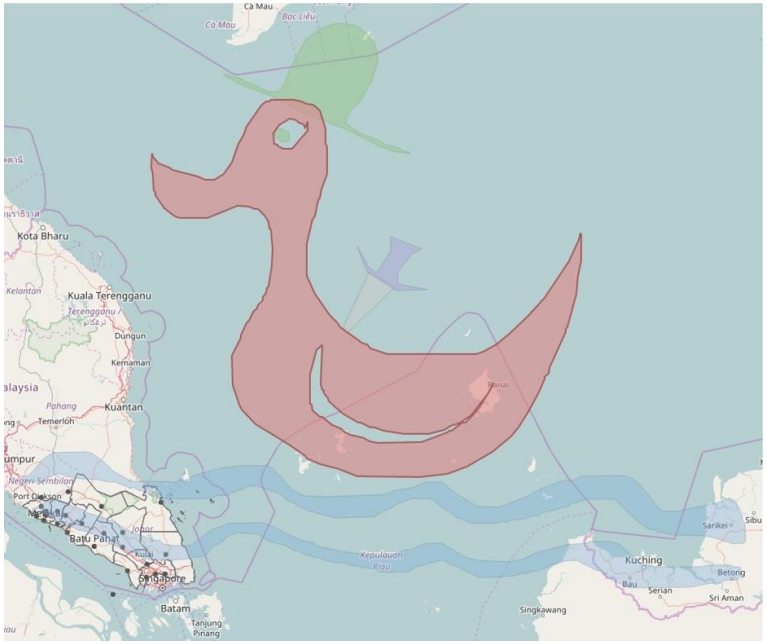
1. Different network conditions

- Development and testing took place on quite good internet connection local conditions in Malaysia were not so pleasing:
    - Network delays (timeouts),
    - Large distance between users (latency),
    - Drop-outs from the network (connection loss).

- Network also affected collaboration.

2. Making WDB intuitive

- Testing was done by multiple users by creating strange polygons, quick clicking, refreshing the application…
- Several crashes followed, mostly caused by unexpected shapes of polygons.

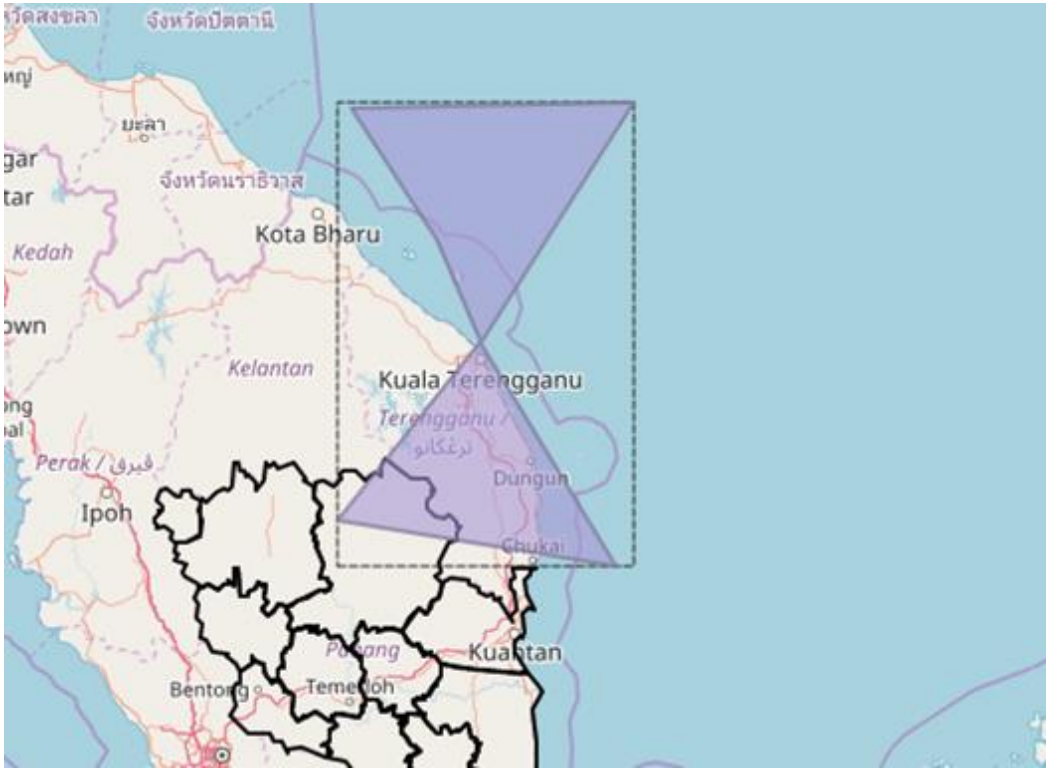


testers

users

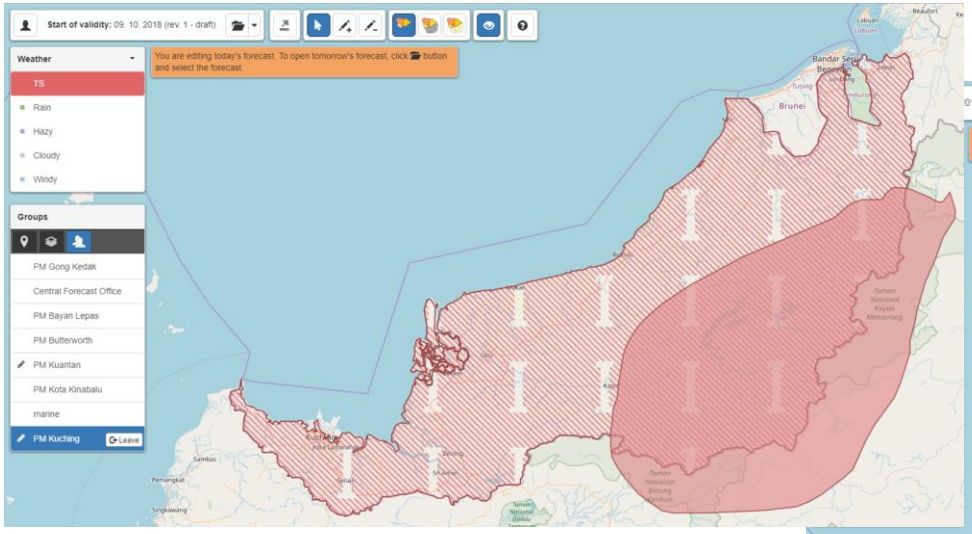
2. Making WDB intuitive

Polygons disappeared when creating them following way:



2. Making WDB intuitive

Testing of thunderstorms preview was mostly done by creating big polygons, users created numerous small polygons.



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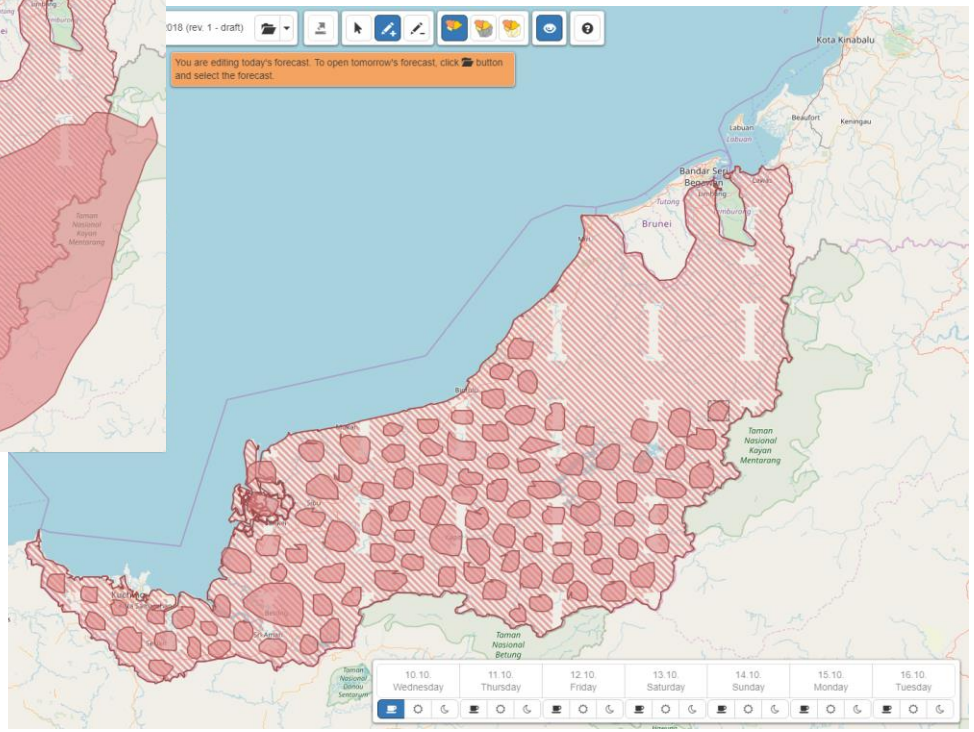
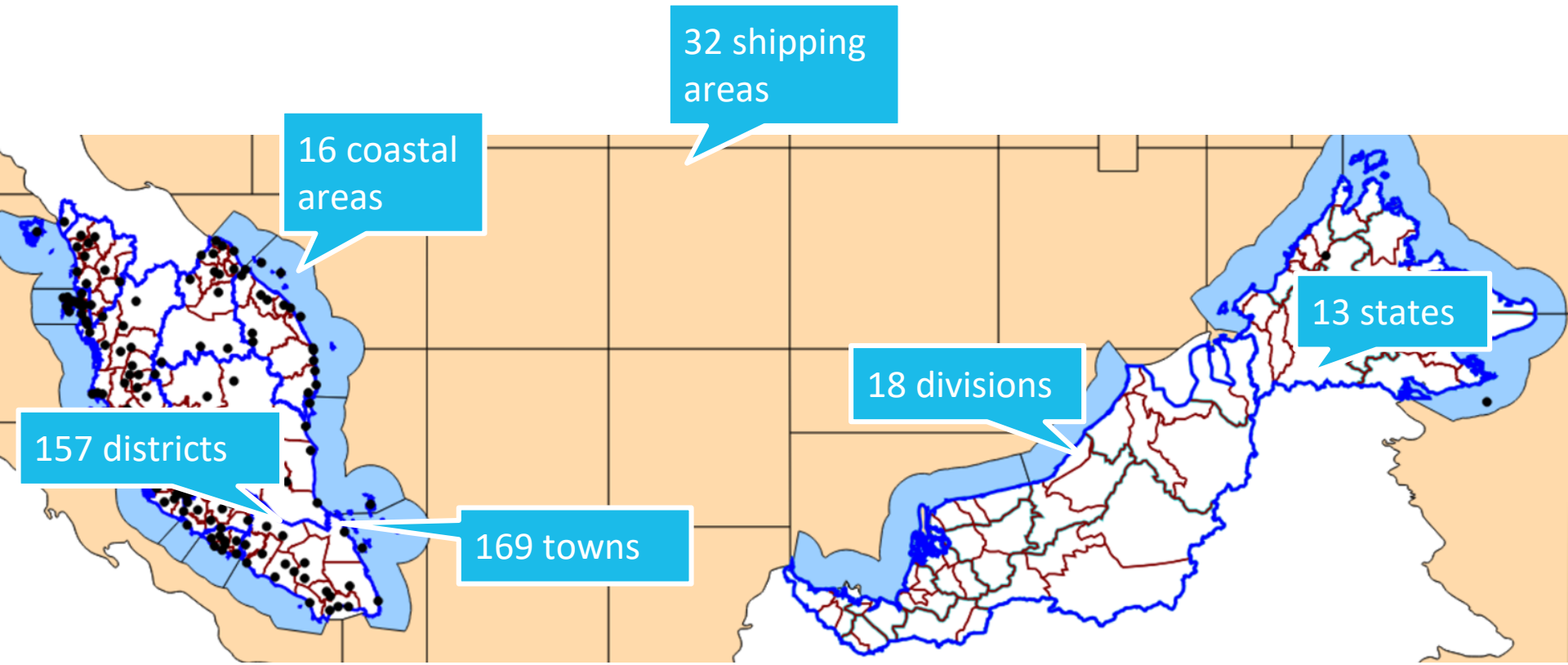
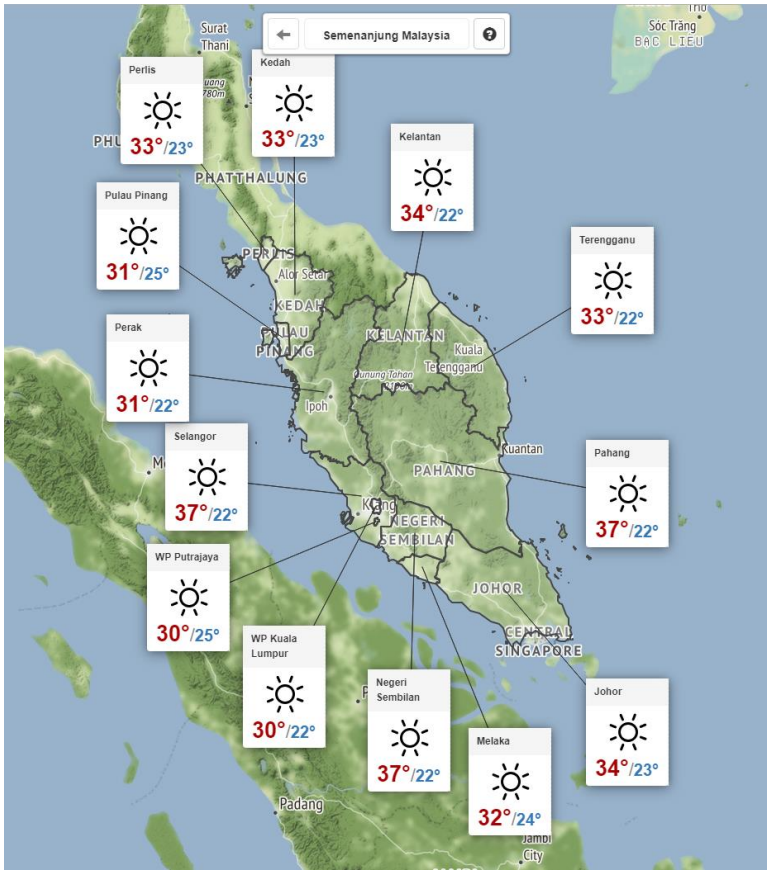


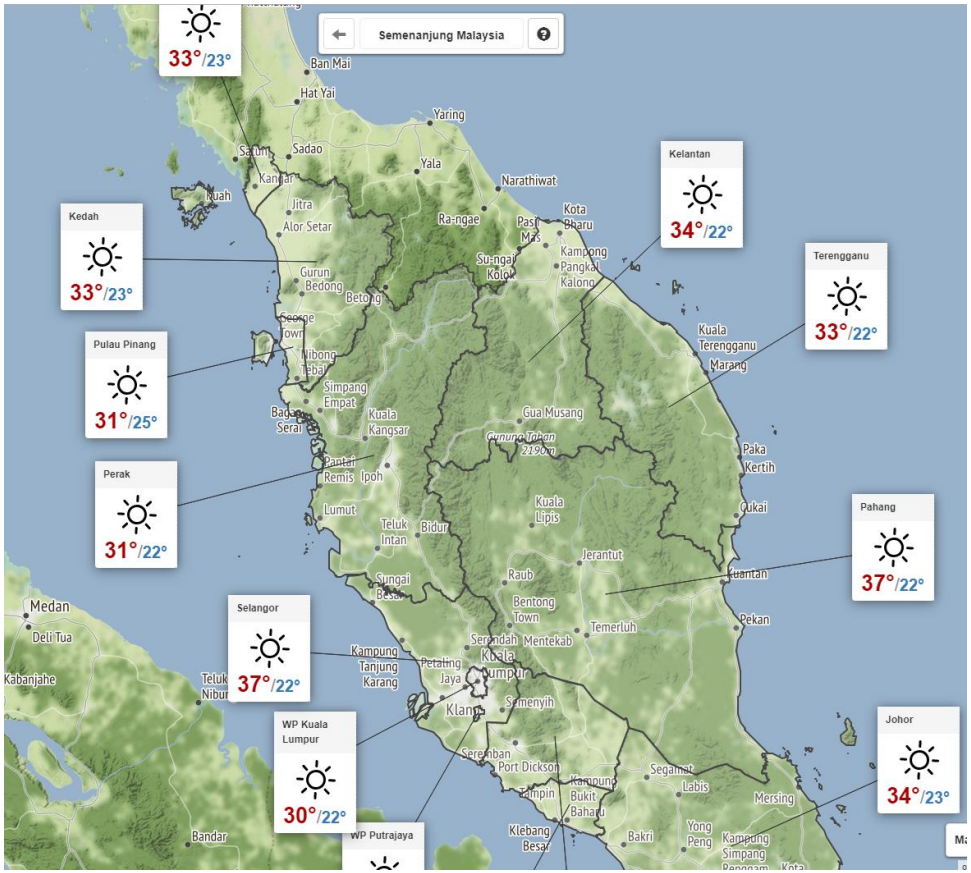
3. Problems with areas



4. Alert Viewer - Position of labels

Position of labels respects labels as well as content bellow and is recalculated after every zoom in action.





5. Training of users

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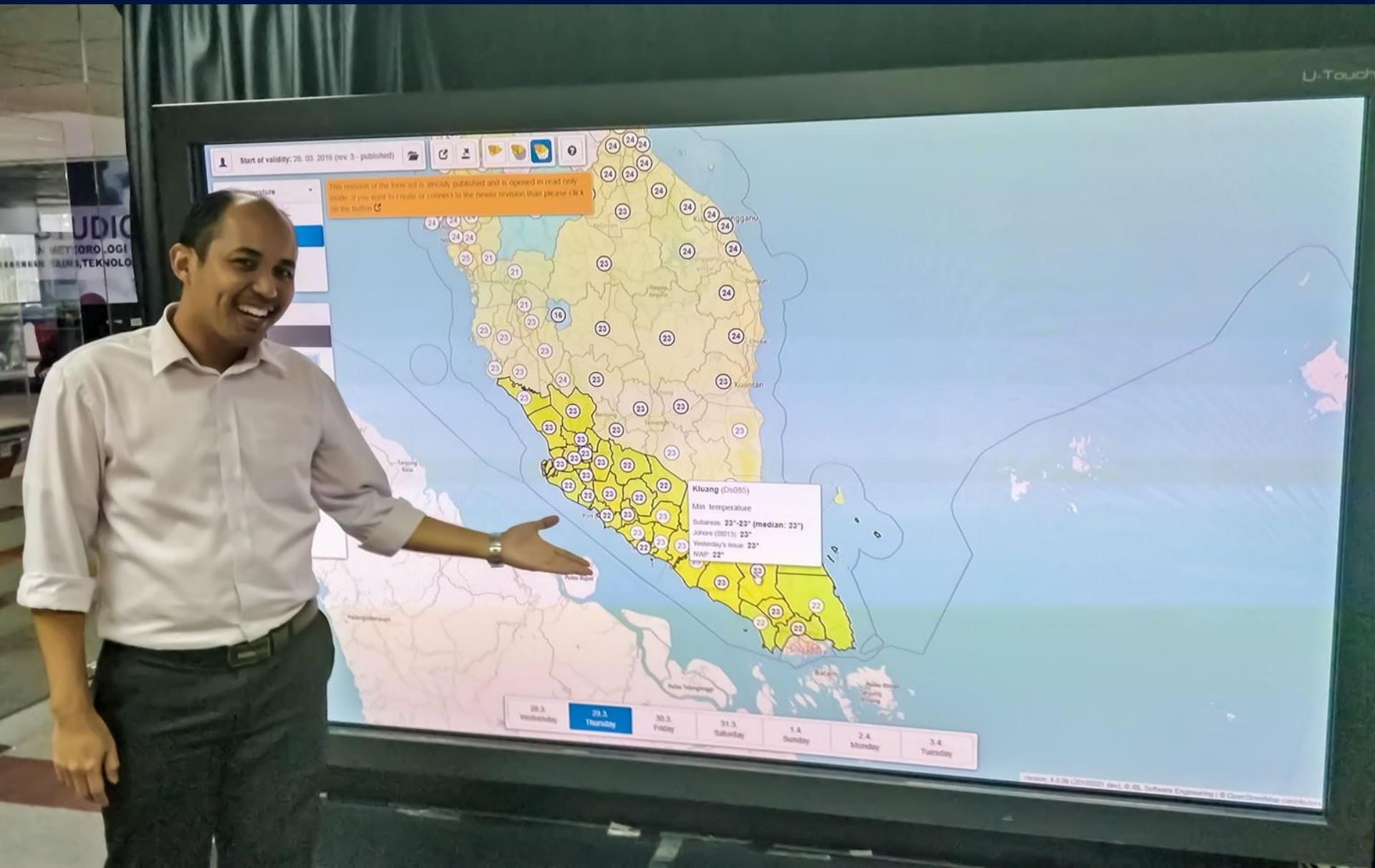
Achievements!

Operational deployment



It was recently awarded as

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Questions?

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