



# Graphical forecast editing in collaborative web environment

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EGOWS

Reading, United Kingdom, 15<sup>th</sup>-17<sup>th</sup> October 2018



- 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

- **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)



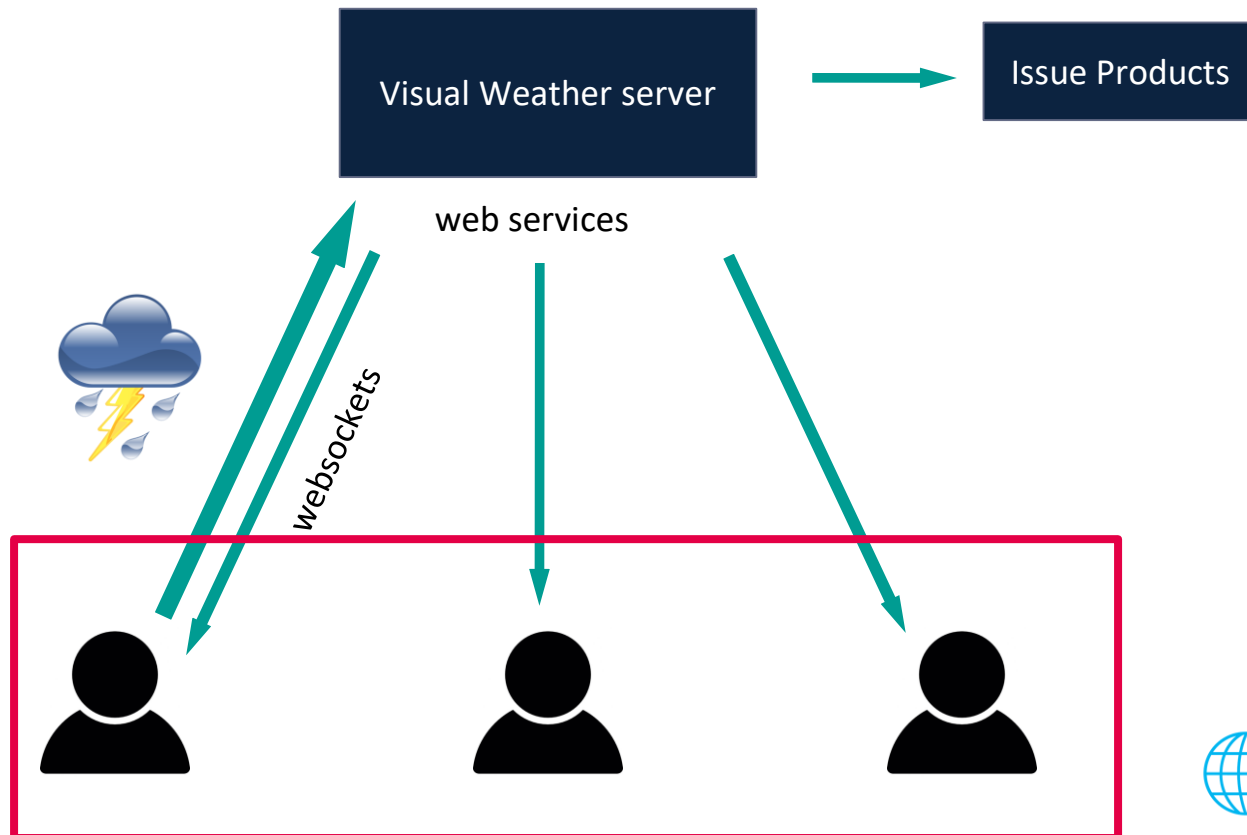
Why do we need map collaborative tools:

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

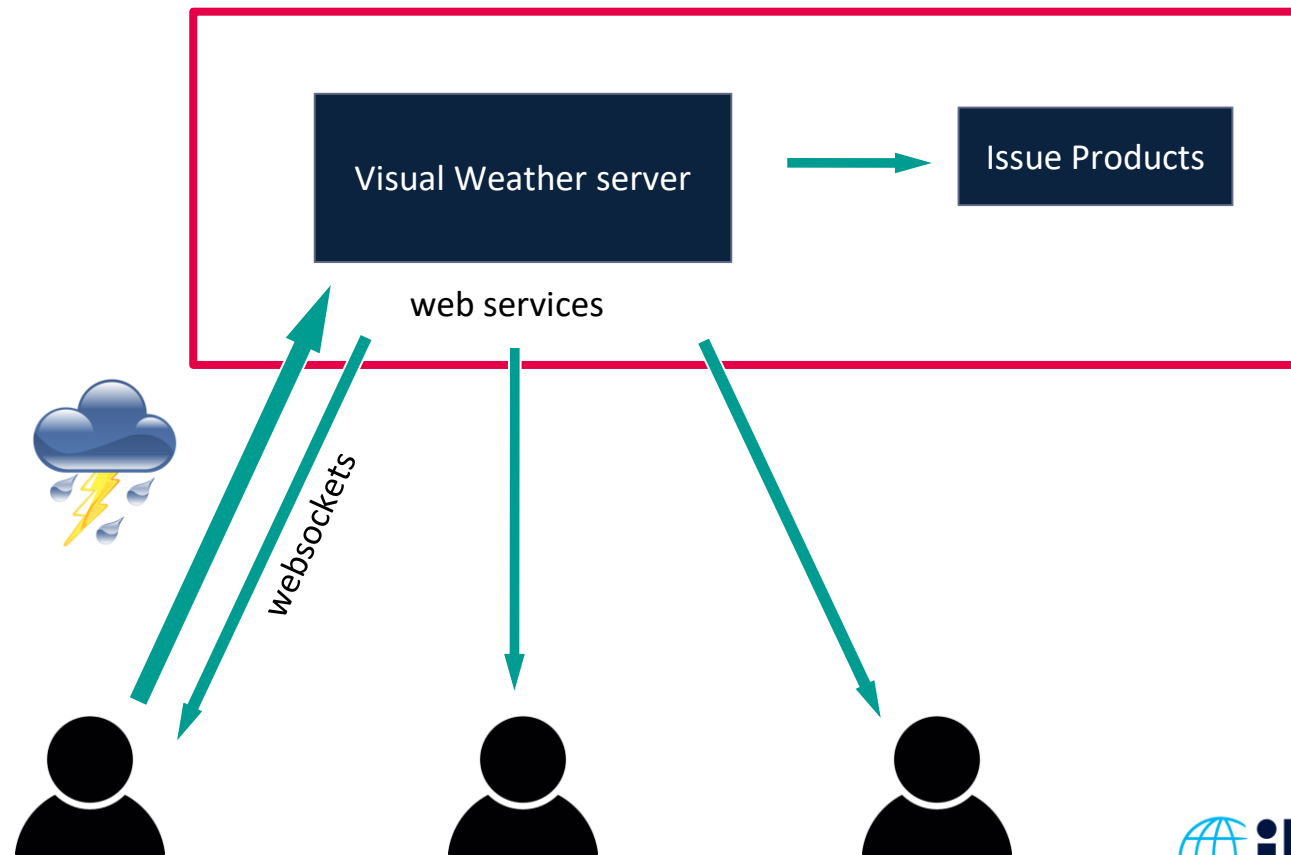
Why online solution:

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

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



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



# Product examples



## JABATAN METEOROLOGI MALAYSIA KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI

Cawangan Kuching,  
Lot 319, Jln Lapangan Terbang lama,  
93667 Kuching Sarawak

Tel: 6-082-617737  
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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, occasionally 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, Jmrtut & Tmrlah) until 2:00AM 11Oct2018.

**Amaran Ribut Petir**

**Masa dikeluarkan:  
3:15 petang; 10 Oktober 2018**

**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, Hillir Perak, Batang Padang dan Huallim) • 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.

Malaysian Meteorological Department

335 31 komentárov 154-krit zdefano

Páci sa mi to Komentovat Zdieľat

Najnovšie

Zobraziť 25 ďalších komentárov

Zakiah Ali Bukit Mertajam hujan lebat mulai turun  
Páci sa mi to Odpovedať Zobrazit preklad 6 h

Sazmita Syeila Taping hujan baru seriat  
Páci sa mi to Odpovedať Zobrazit preklad 5 h

Fanza Shah Butterworth hyn blk... hrg  
shdnt ya Allah... itau lah! gataun dh m  
Páci sa mi to Odpovedať Zobrazit preklad 4 h

3 odpovede 4 h

Mawar Putih Meteorologi up status baru  
Páci sa mi to Odpovedať Zobrazit preklad 4 h

Fanza Shah Xdk update yg baru ka met  
Malaysia ....  
Páci sa mi to Odpovedať Zobrazit preklad 4 h

Shidah Homemade Hujan turun baru  
update  
Páci sa mi to Odpovedať Zobrazit preklad 3 h

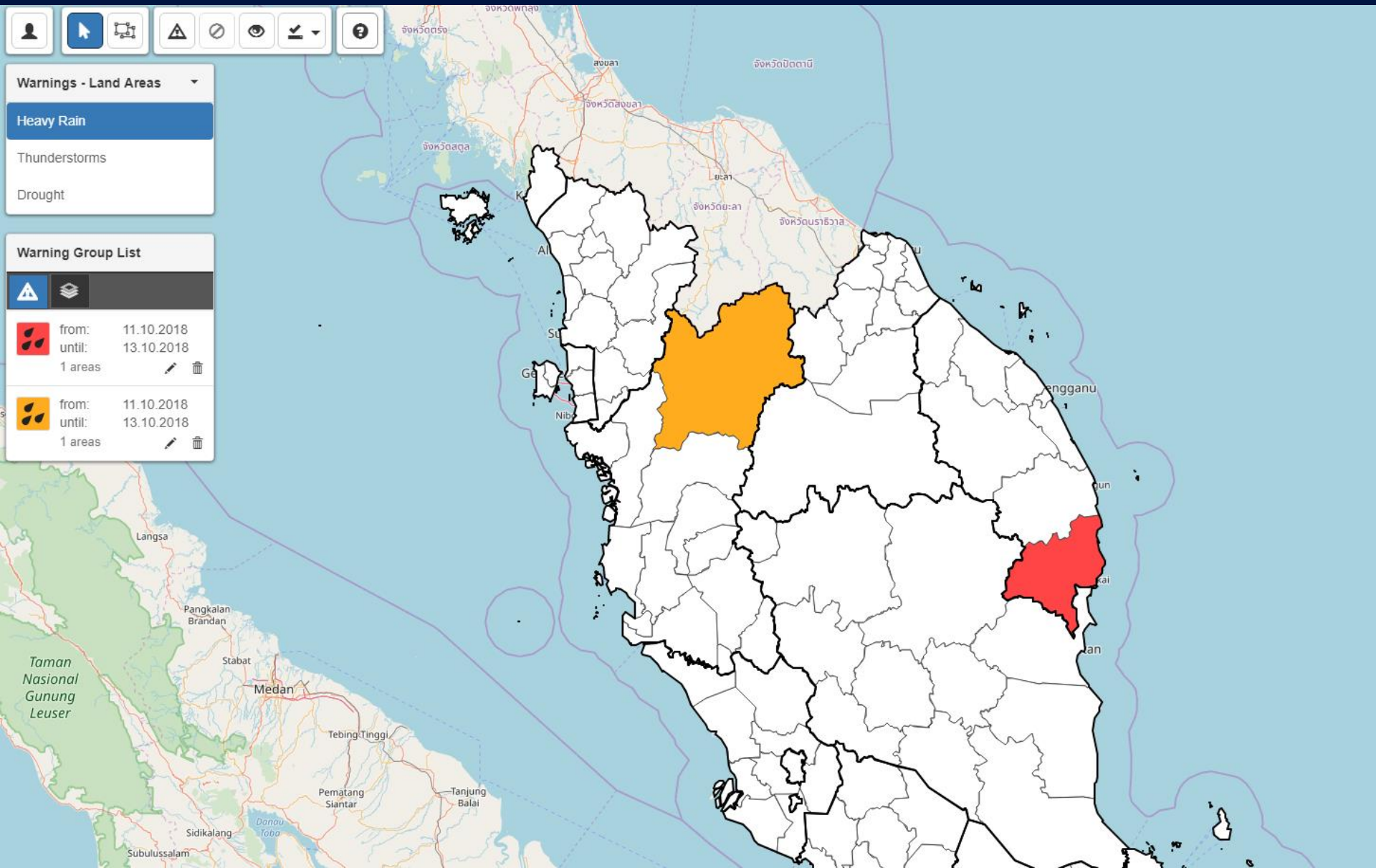


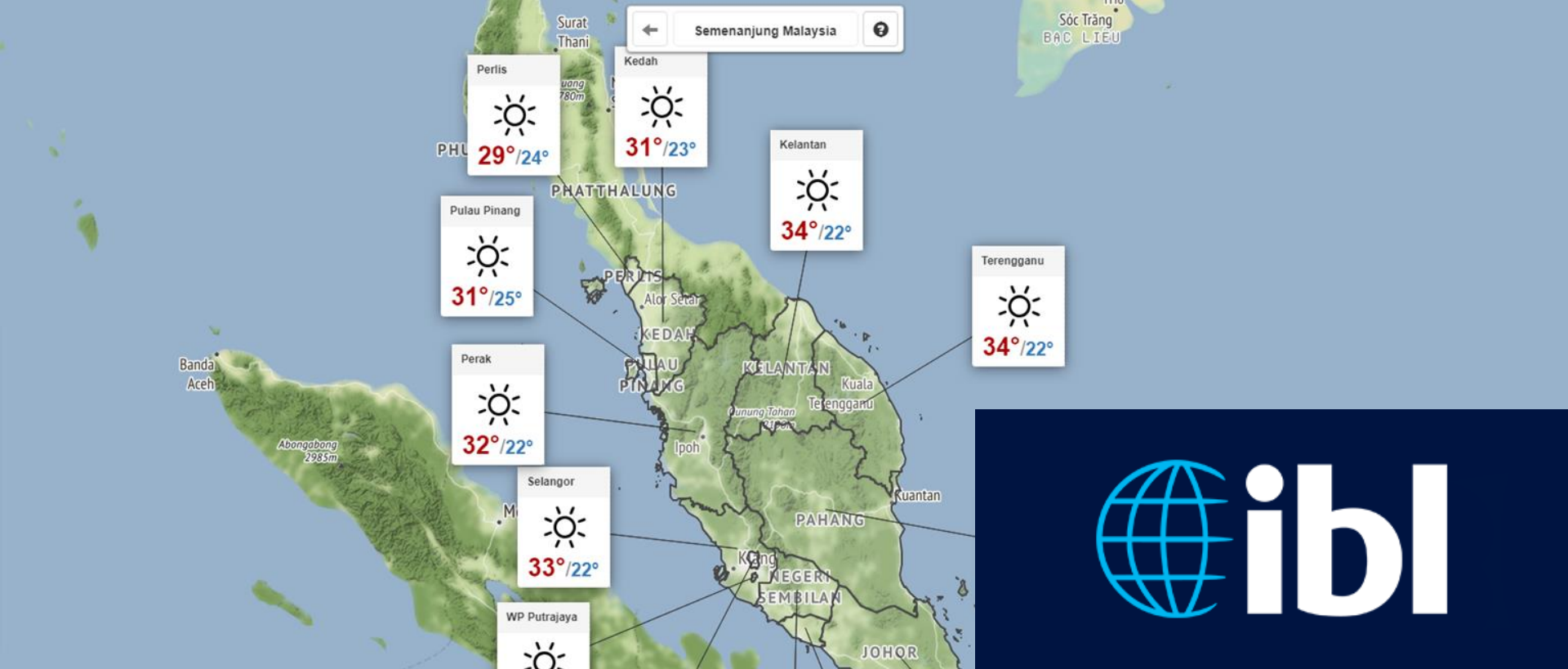






# Weather Drawboard - Alert Editor






## Demonstration of Weather Drawboard



# WDB Forecast Editor




Start of validity: 28. 09. 2018 (rev. 1 - draft)

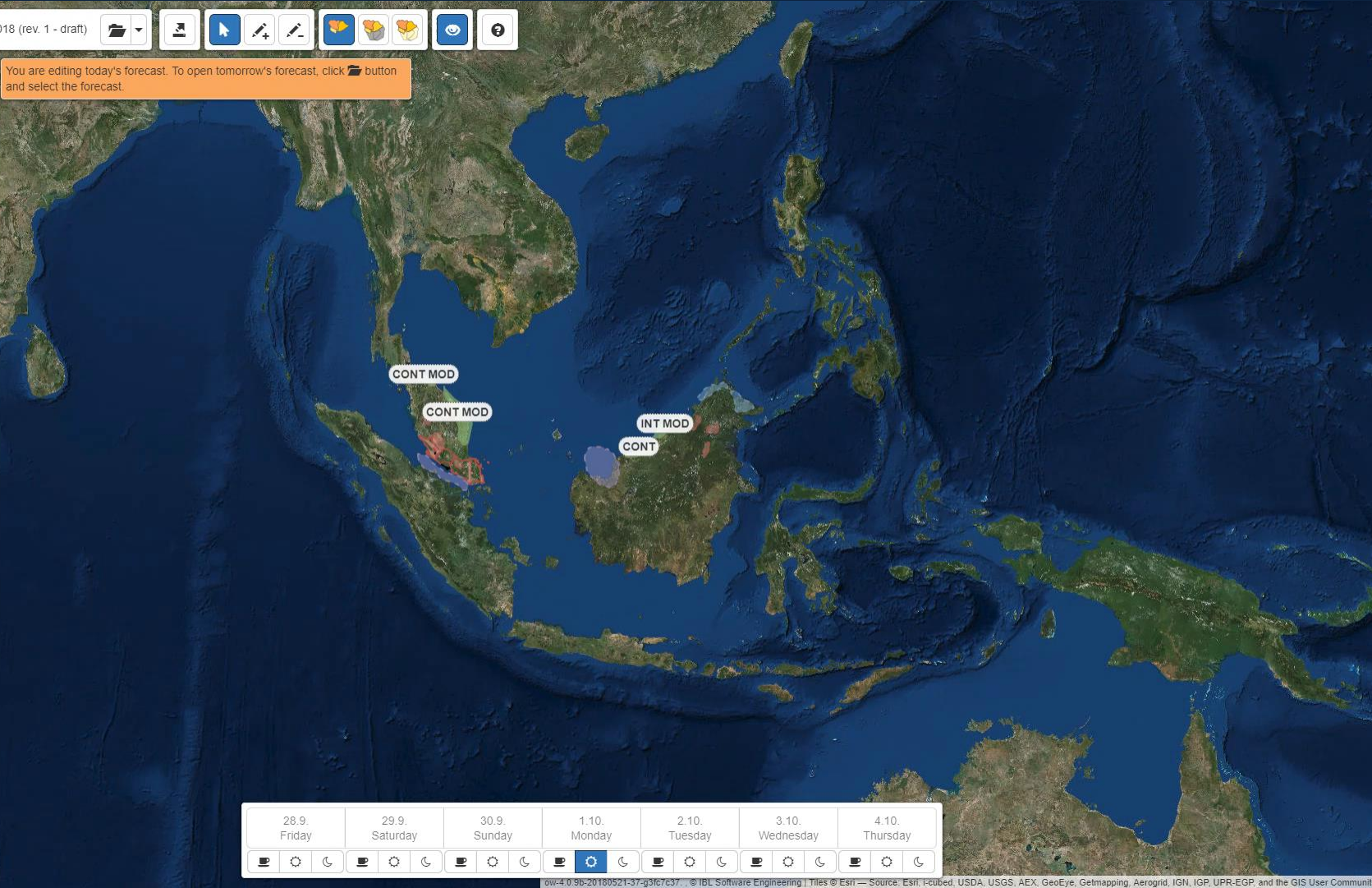
You are editing today's forecast. To open tomorrow's forecast, click  button and select the forecast.

**Weather**


- TS
- Rain
- Hazy
- Cloudy
- Windy

**Background**

- 
- 
- 



28.9. Friday    29.9. Saturday    30.9. Sunday    1.10. Monday    2.10. Tuesday    3.10. Wednesday    4.10. Thursday



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# WDB Forecast Editor

Start of validity: 28. 09. 2018 (rev. 1 - draft)

24h NWP

Min. Temperature

You are editing today's forecast. To open tomorrow's forecast, click  button and select the forecast.

Towns

Districts

Divisions

States

Background

24 24 26 23 23 23 24 24 27 24 25 25 22 28 23

28.9. Friday	29.9. Saturday	30.9. Sunday	1.10. Monday	2.10. Tuesday	3.10. Wednesday	4.10. Thursday
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ow:4:0.96:20180521-37-g3f7c37... © IBL Software Engineering | Tiles © Esri — Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, UPR-EGP, and the GIS User Community

# WDB Forecast Editor

Start of validity: 28. 09. 2018 (rev. 1 - draft)

Wind  
Fishery Areas  
Shipping Areas

Background

You are editing today's forecast. To open tomorrow's forecast, click button and select the forecast.

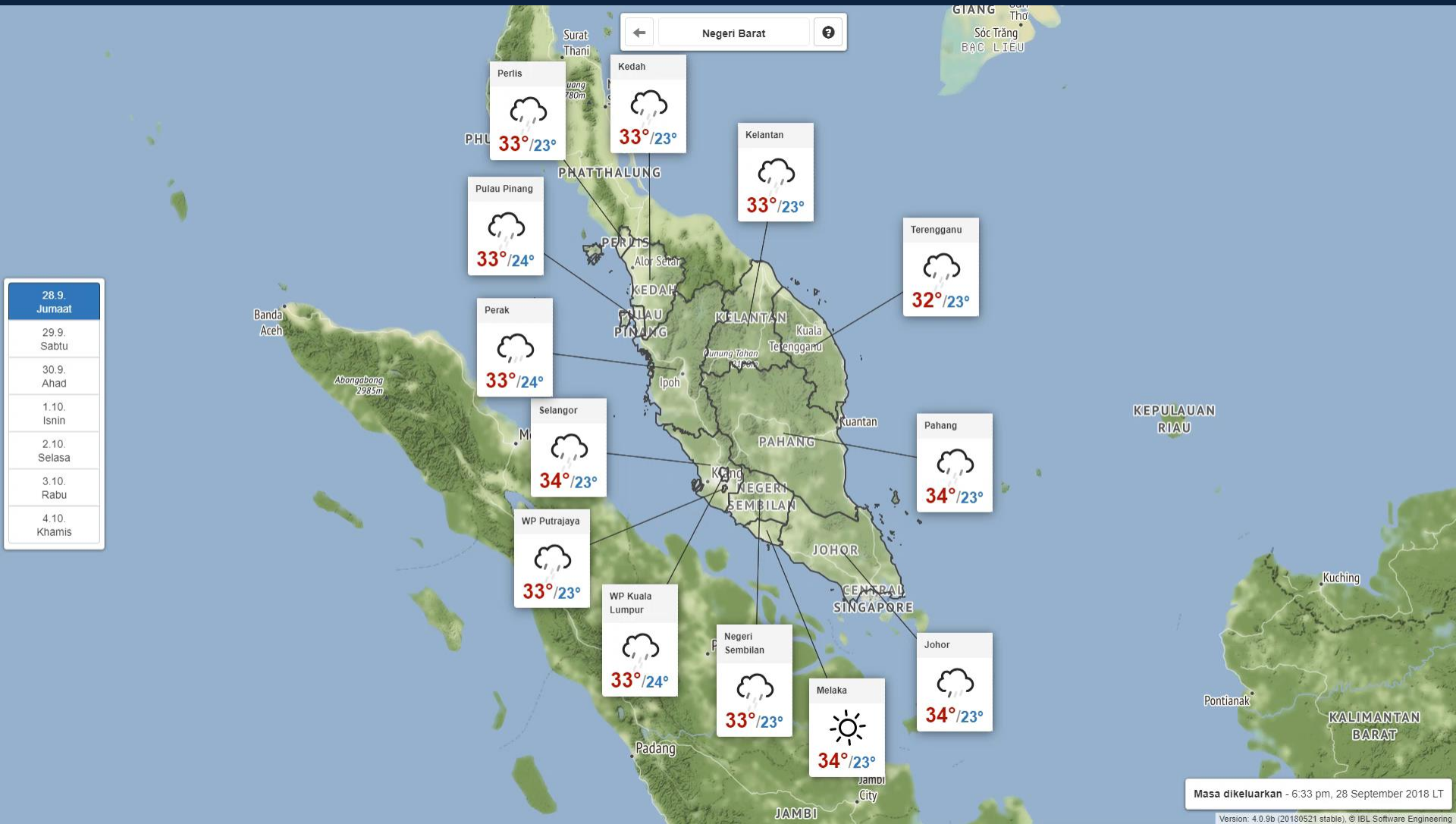
28.9. Friday   29.9. Saturday   **30.9. Sunday**   1.10. Monday   2.10. Tuesday   3.10. Wednesday   4.10. Thursday

Dennasar Mataram

ow-4.0.9b-20180521-37-g3fc7c37 © IEL Software Engineering



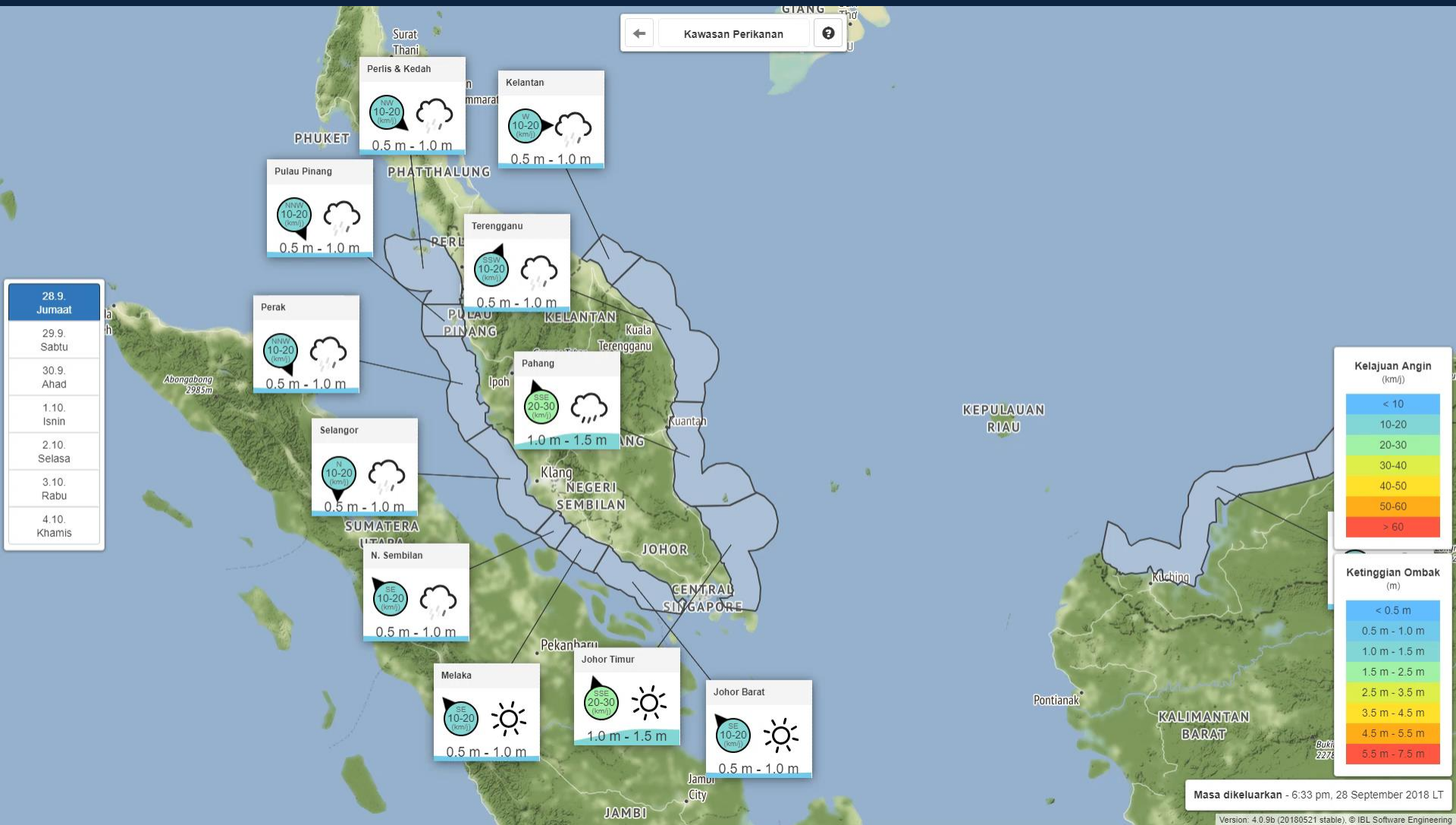
# WDB Forecast Viewer



28.9. Jumaat
29.9. Sabtu
30.9. Ahad
1.10. Isnin
2.10. Selasa
3.10. Rabu
4.10. Khamis

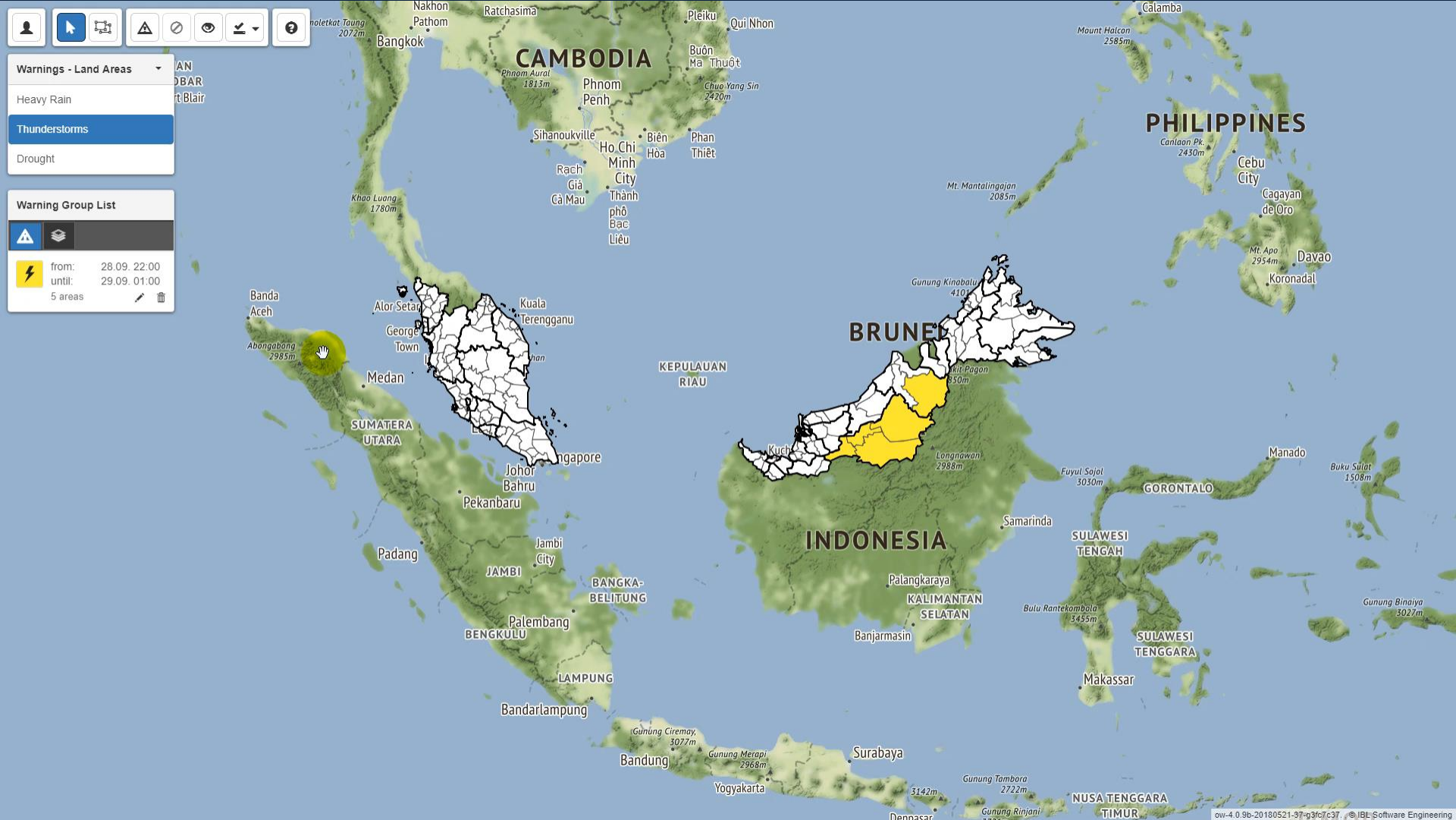
Masa dikeluarkan - 6:33 pm, 28 September 2018 LT

# WDB Forecast Viewer





# WDB Alert Editor






Challenges encountered or  
lessons learnt



# 1. Different network conditions

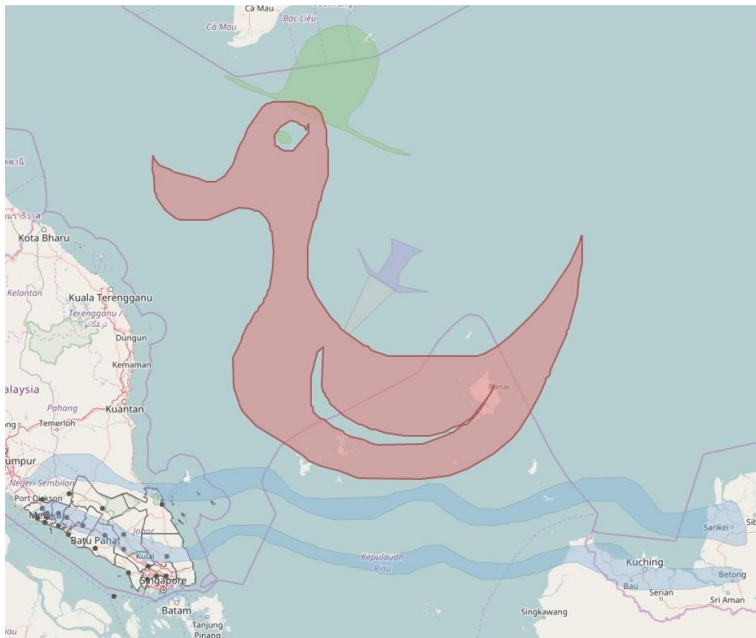


- Development and testing took place on quite good internet connection  local conditions in Malaysia were not so pleasing:
  - Network delays (timeouts),
  - Large distance between users (latency),
  - Drop-outs from the network (connection loss).
  
- Network also affected collaboration.

## 2. Making WDB intuitive

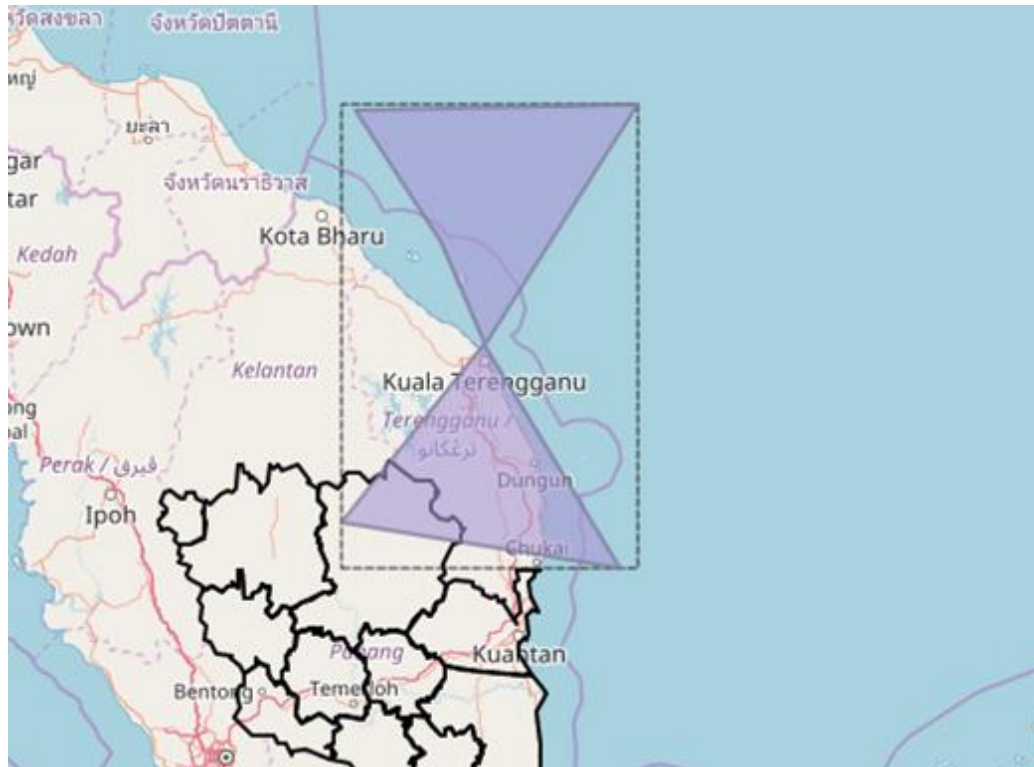


- Testing was done by multiple users by creating strange polygons, quick clicking, refreshing the application...
- Several crashes followed, mostly caused by unexpected shapes of polygons.



## 2. Making WDB intuitive

Polygons disappeared when creating them following way:

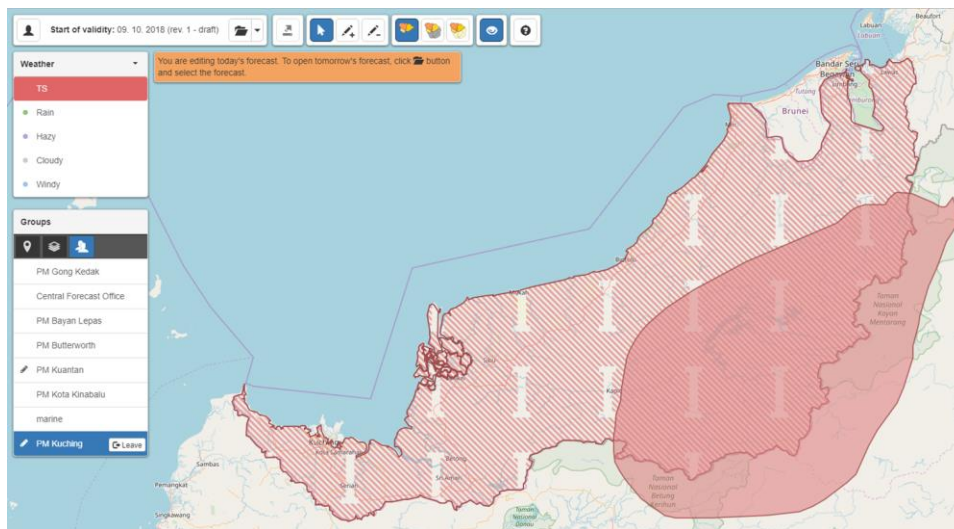




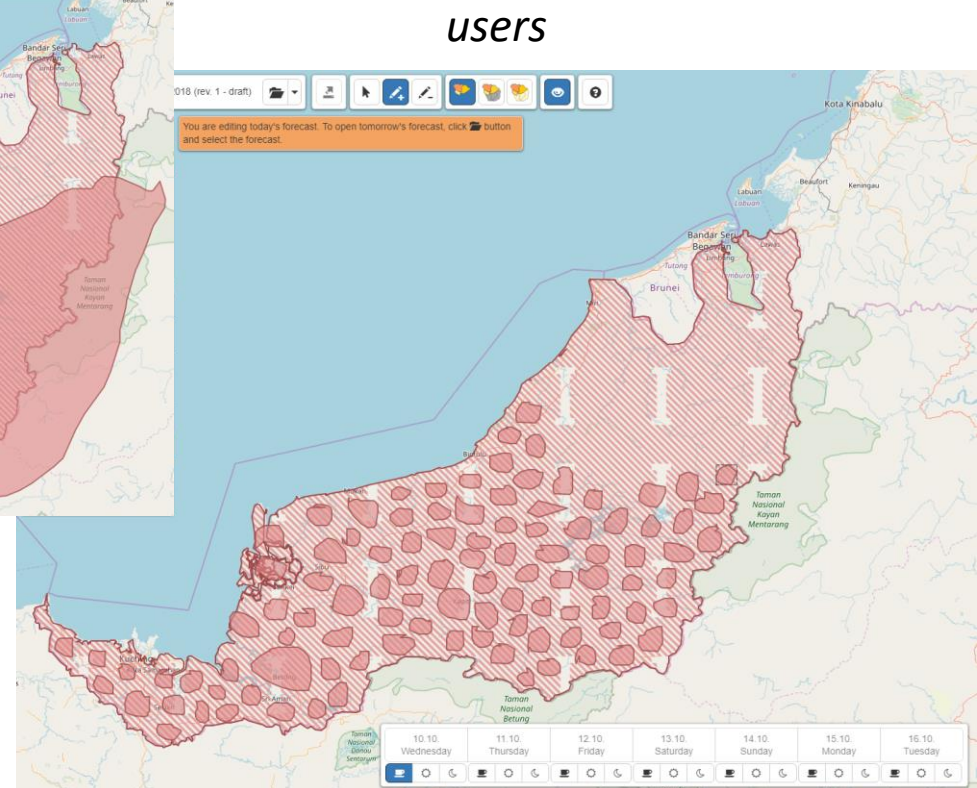
## 2. Making WDB intuitive



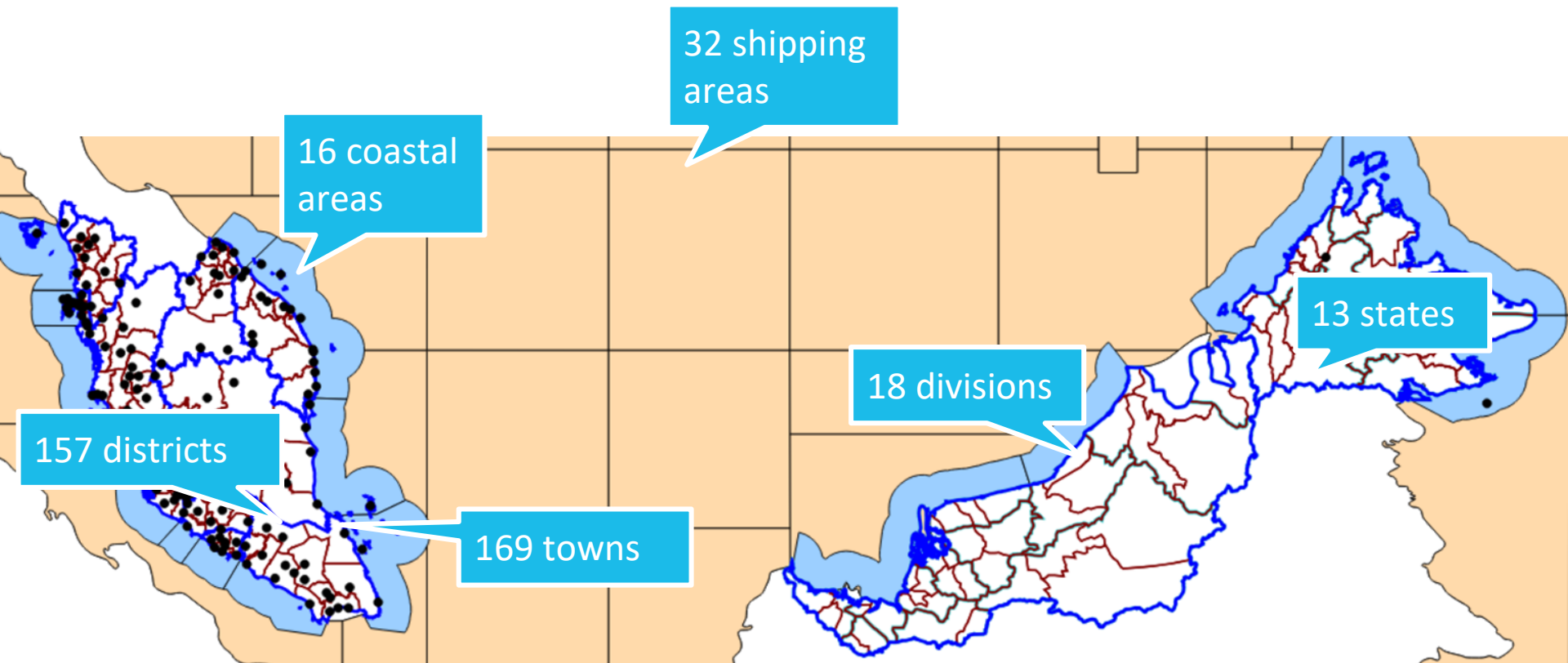
Testing of thunderstorms preview was mostly done by creating big polygons, users created numerous small polygons.



*testers*



### 3. Problems with areas

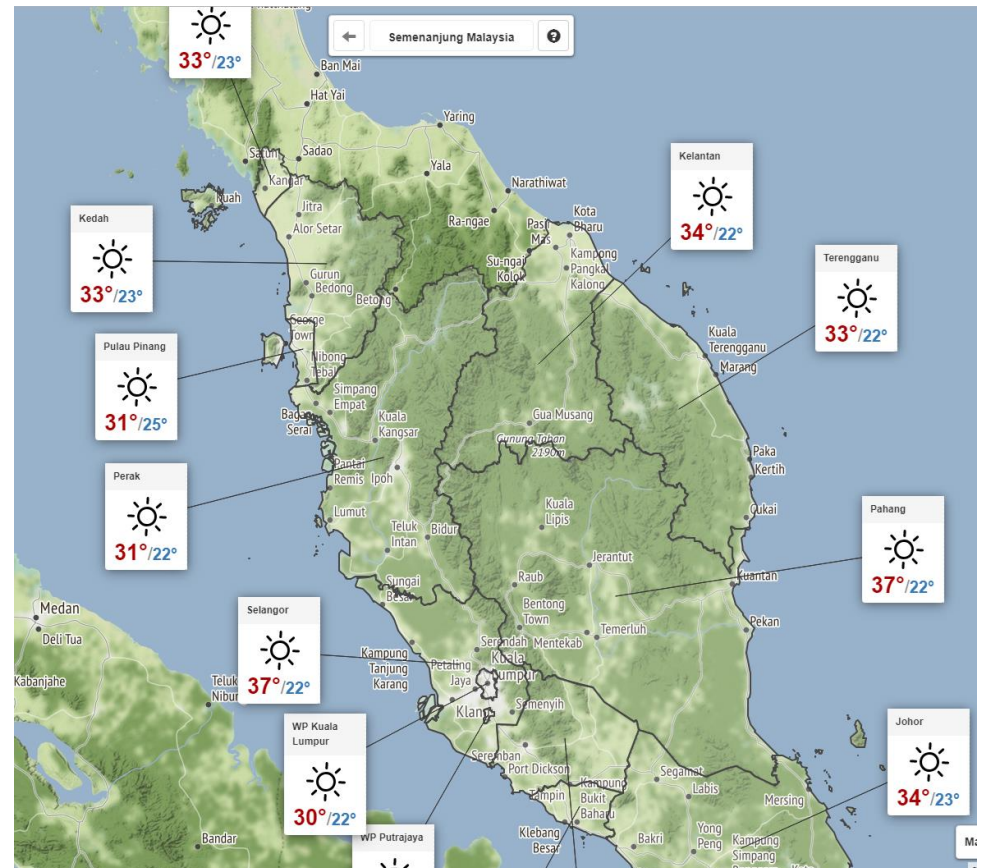
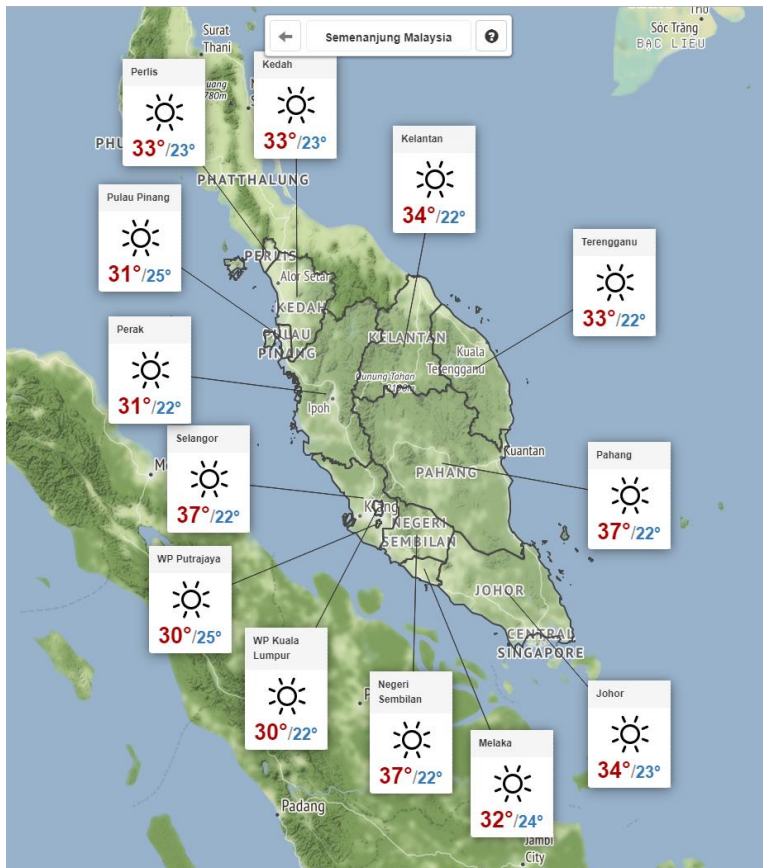




# 4. Alert Viewer - Position of labels



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



# 5. Training of users





# 5. Training of users

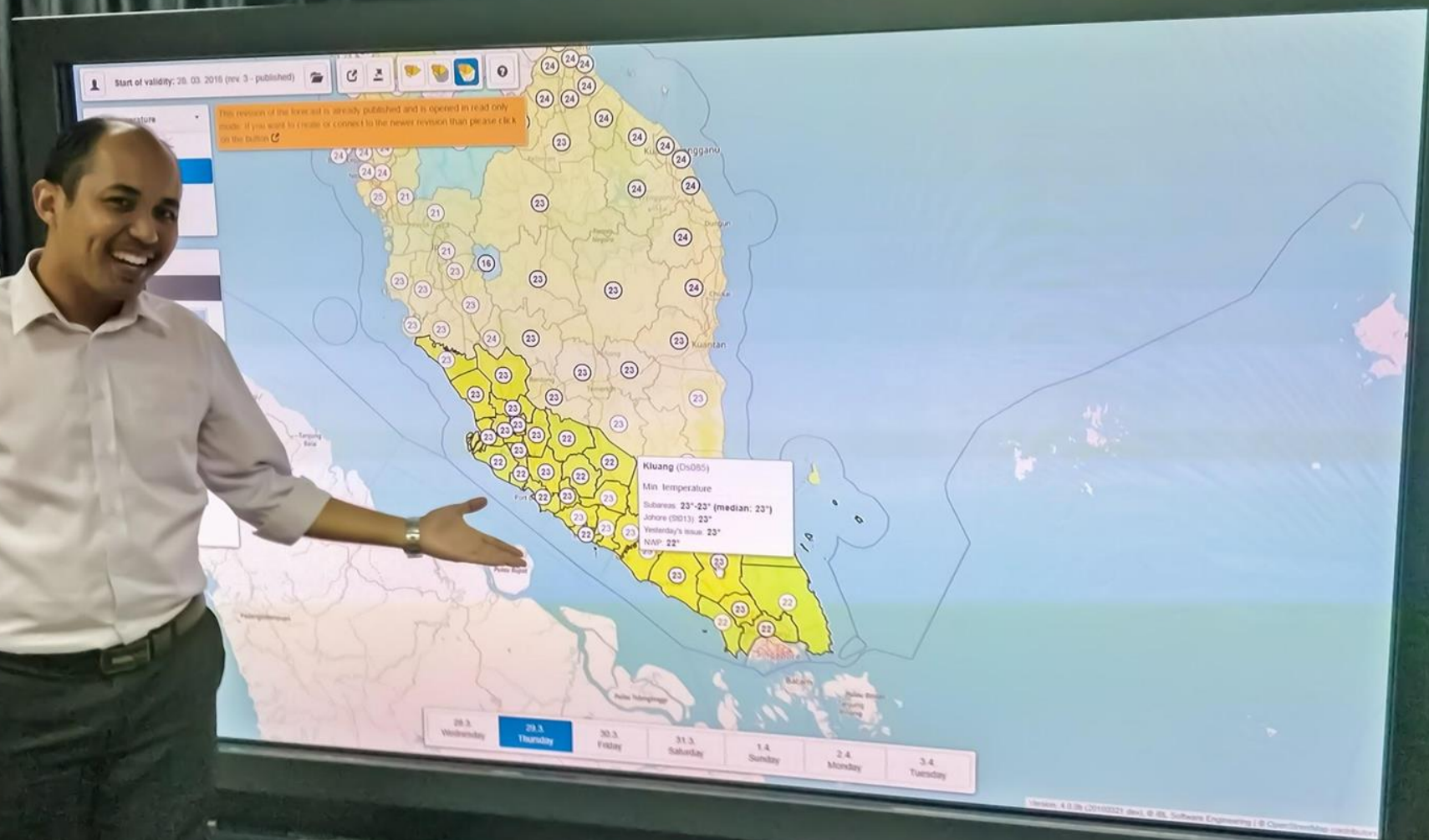




Achievements!



# Operational deployment





It was recently  
awarded as  
**IT product of 2018**  
in Slovakia





DIPLOM  
**IT GALA**  
2018  
IT PRODUKT ROKA 2018  
Weather Dashboard,  
IBI Software  
Engineering, spol. s r.o.



# Questions?

