



# *Country Report - Thailand*

*WMO/ASEAN Training Workshop  
on Weather Radar Quality Control and Radar Data Exchange  
29 JAN – 2 FEB 2024*

*Nuthakit Singhaphet*

*Meteorologist  
Thai Meteorological Department*

# *Table Of Contents*

---



*Observation system overview and updates*

*Data Processing of Weather Radar Data*

*Utilization and application of weather radar data*

*Technical challenges and plan for weather radar*



# *Observation system overview and updates*

# Observation system overview and updates

## The Overview (1)



## Radar Data

### Product & Services

- TMD developed and provide RADAR on the TMD website ([weather.tmd.go.th](http://weather.tmd.go.th))
- All data support severe situation from rainfall impact. On request for local organization supported
- Quality Control (QC) technique with PCAPPI table adjustment for RADAR Composite algorithm that assistance support by JMA.

# Observation system overview and updates

## The Overview (2)



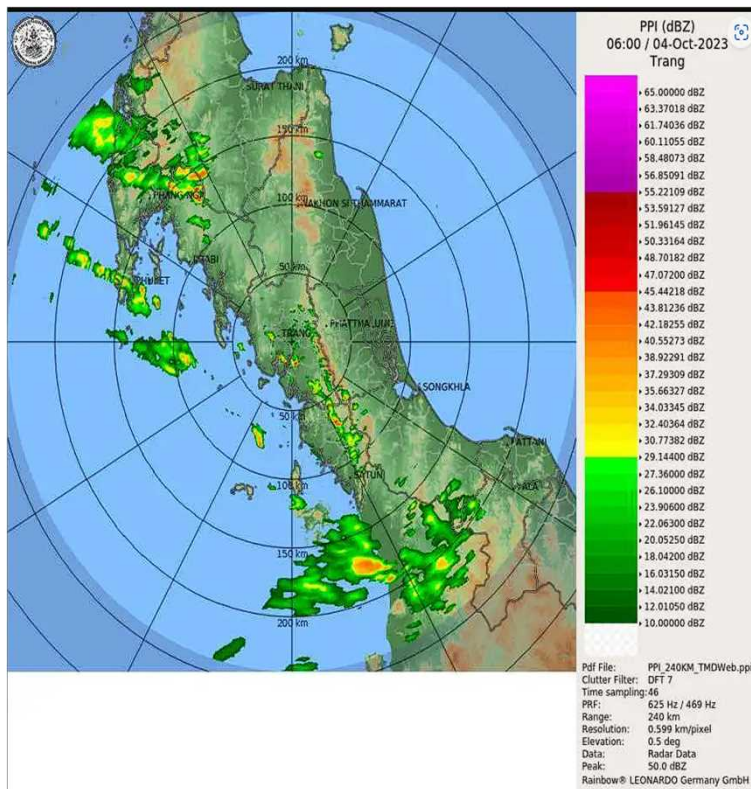
## Radar Data

### Data Policy

- Native company and converted UF format, Nationwide composite, QPE and radar exchanged are storage in TMD's server for internal used only
- 15 minutes PPI scan and nationwide composite images products disseminate on the TMD's web site immediately after finished observation
- Hourly QPE image and ESRI Ascii format disseminate on the TMD's web site immediately after finished processing

# Observation system overview and updates

## Additional Data in System



## Radar Site

Station :: Trang

Latitude :: 7:30:44.265625N

Longitude :: 99:37:14.53125E

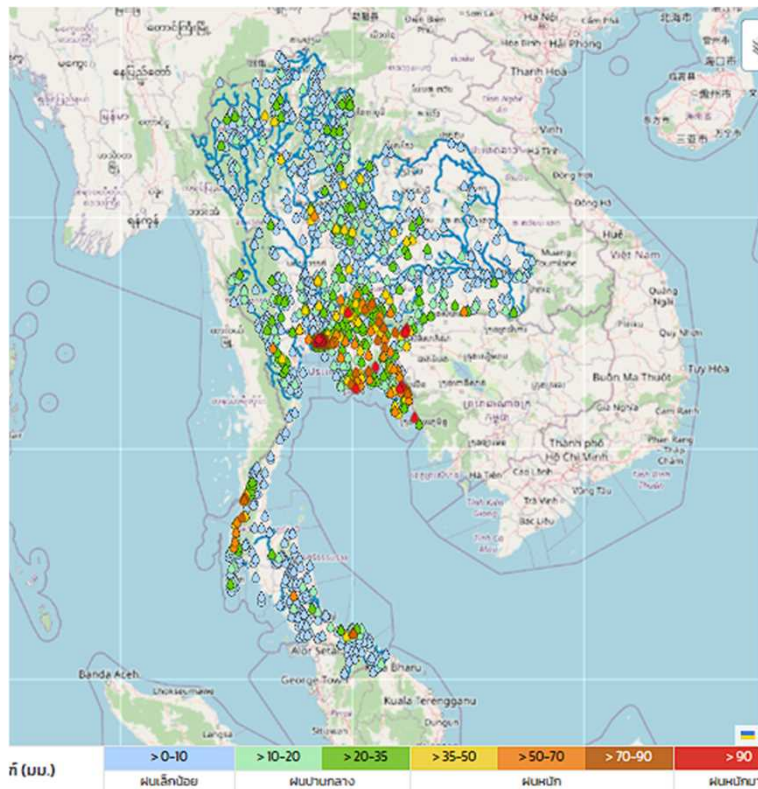
Altitude :: 42.77 meters

Band :: C-Band



# Observation system overview and updates

## Additional Data in System



# Telemetering

Product Owner :: HII

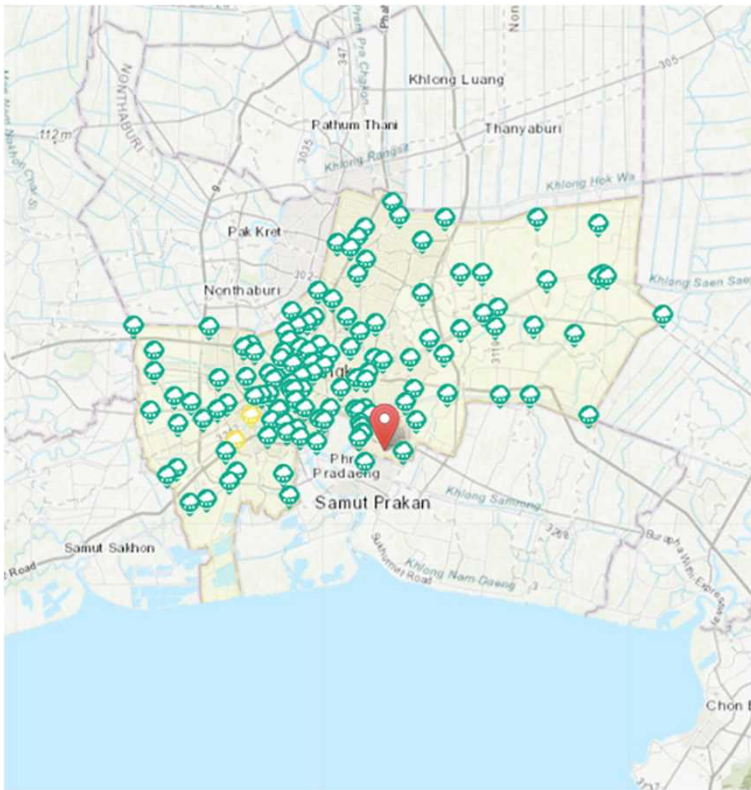
Number of Unit

**+ 1,304**

Over Thailand

# Observation system overview and updates

## Additional Data in System



## Telemetering

Product Owner :: DDS-Bangkok

Number of Unit

**+ 127**

Over Bangkok Area

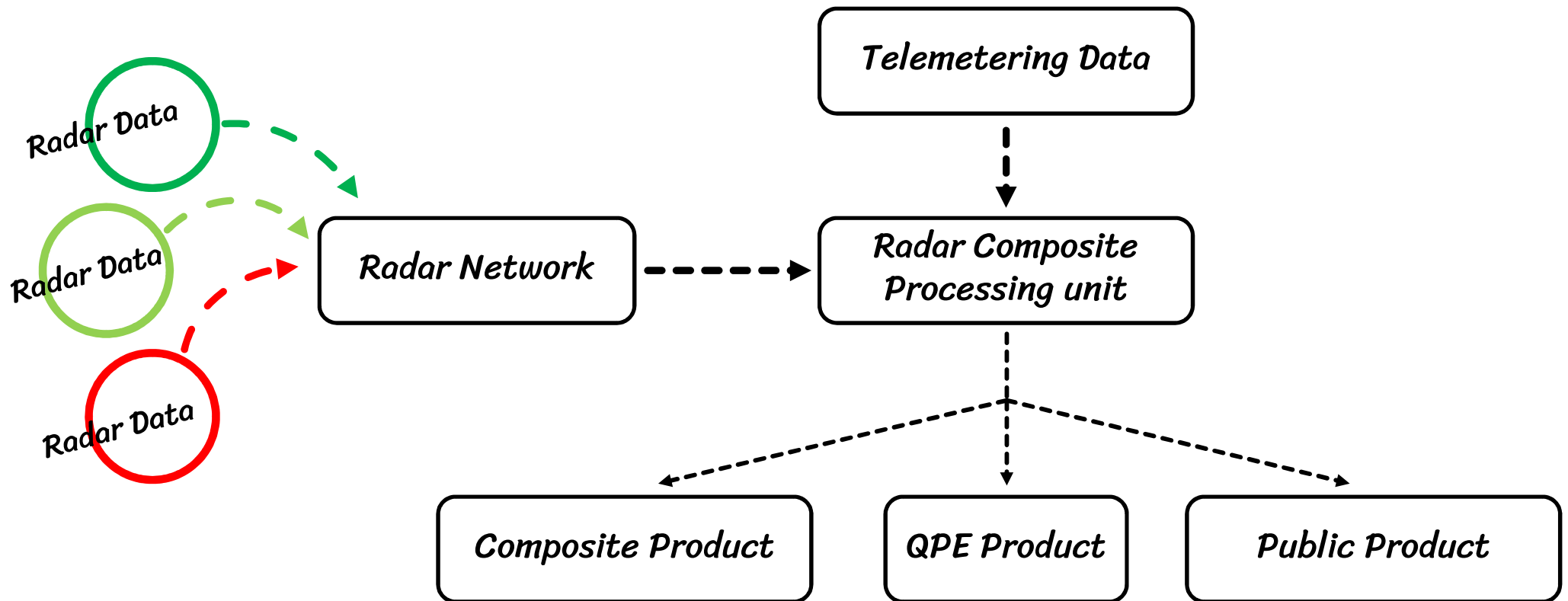




# *Data Processing of Weather Radar Data*

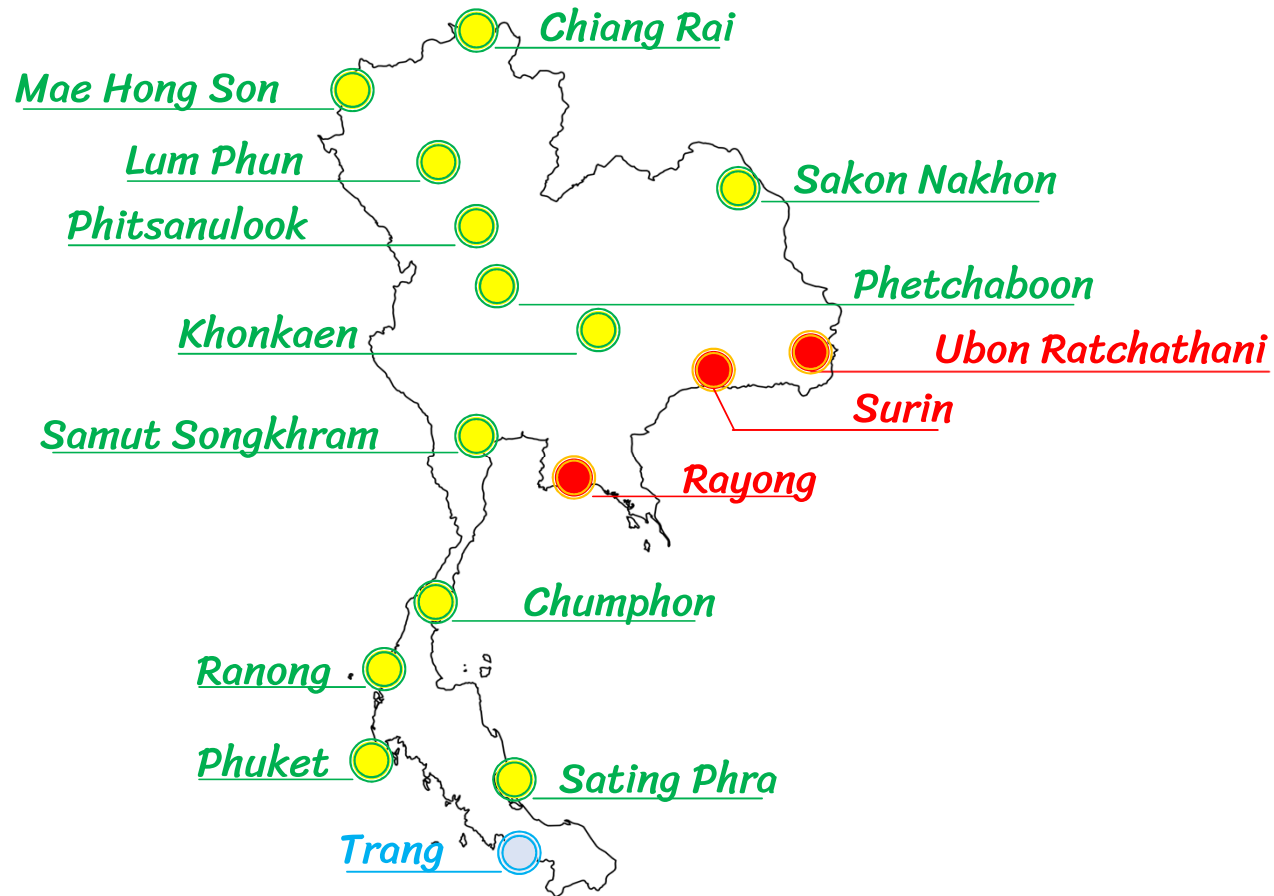
# Data Processing of Weather Radar Data

## Data Pipeline

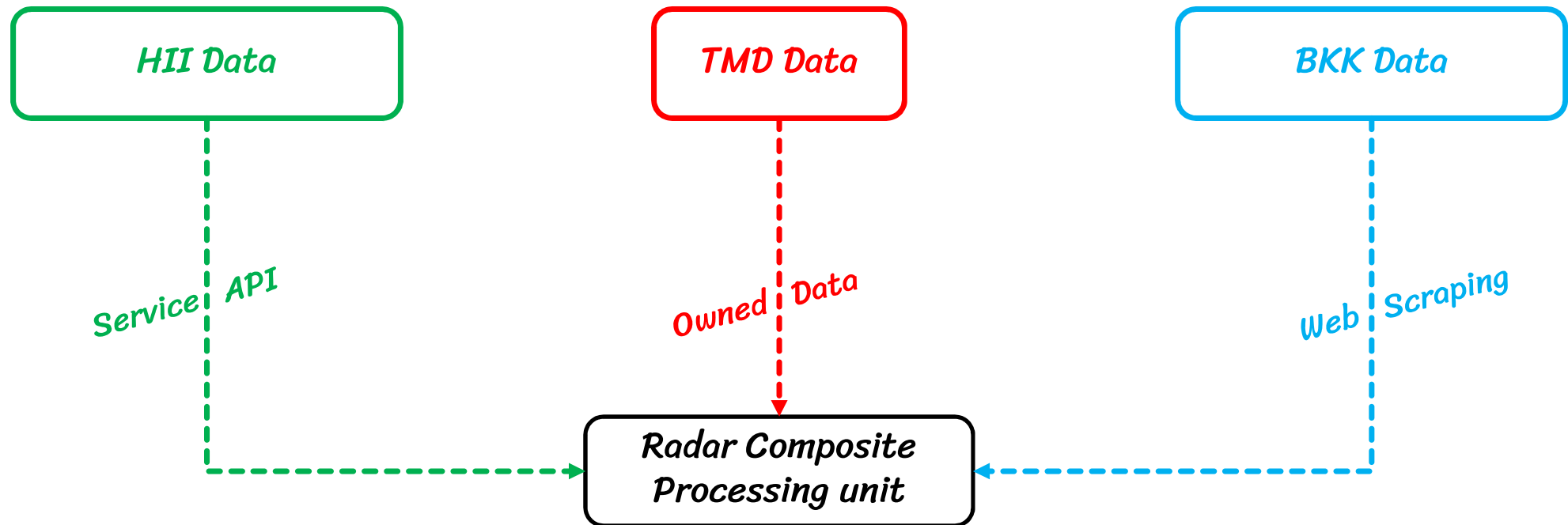


# Data Processing of Weather Radar Data

## Usage Radar Site



# Data Processing of Weather Radar Data Usage Telemetering Site



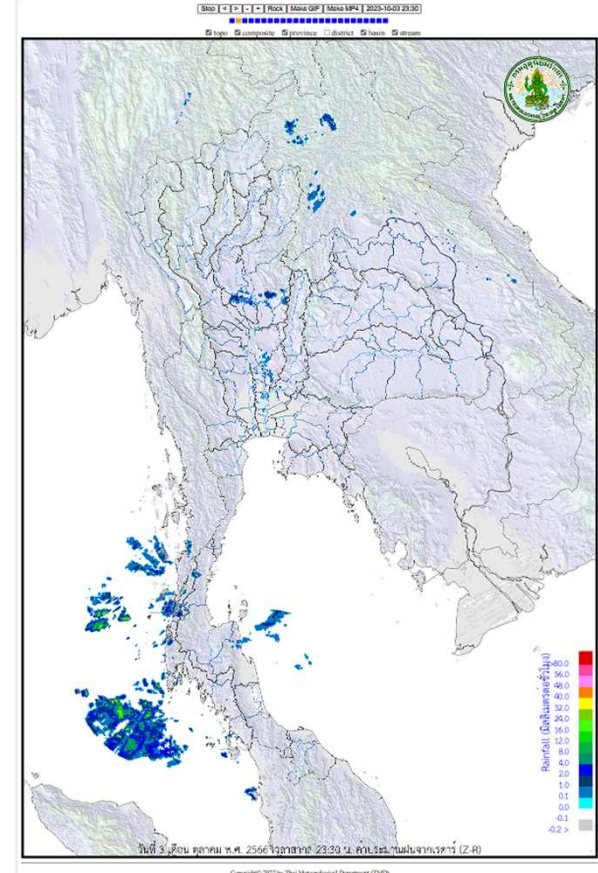
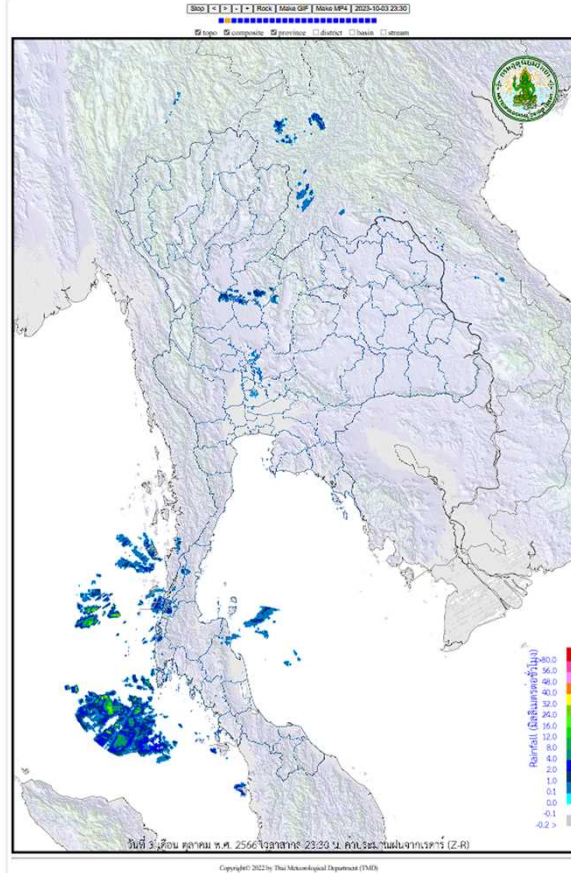
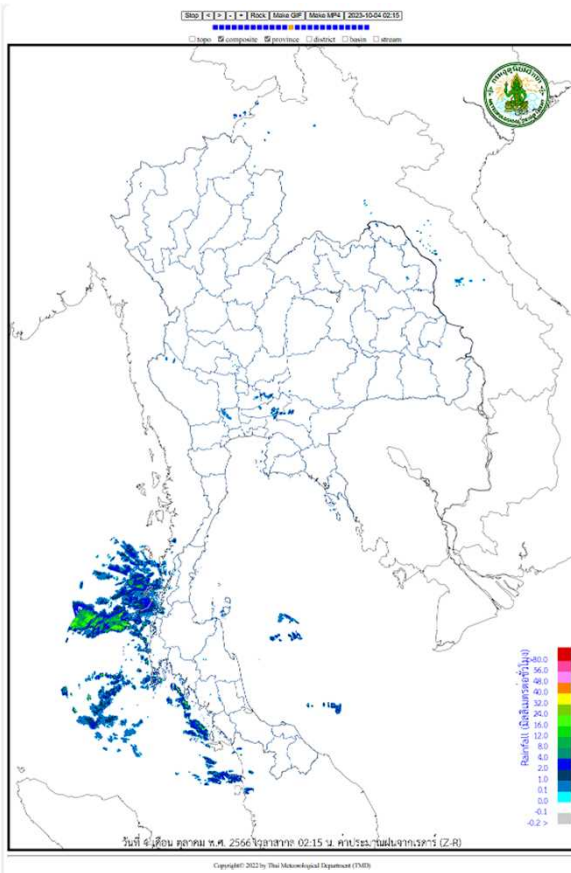


# *Utilization and application of weather radar data*



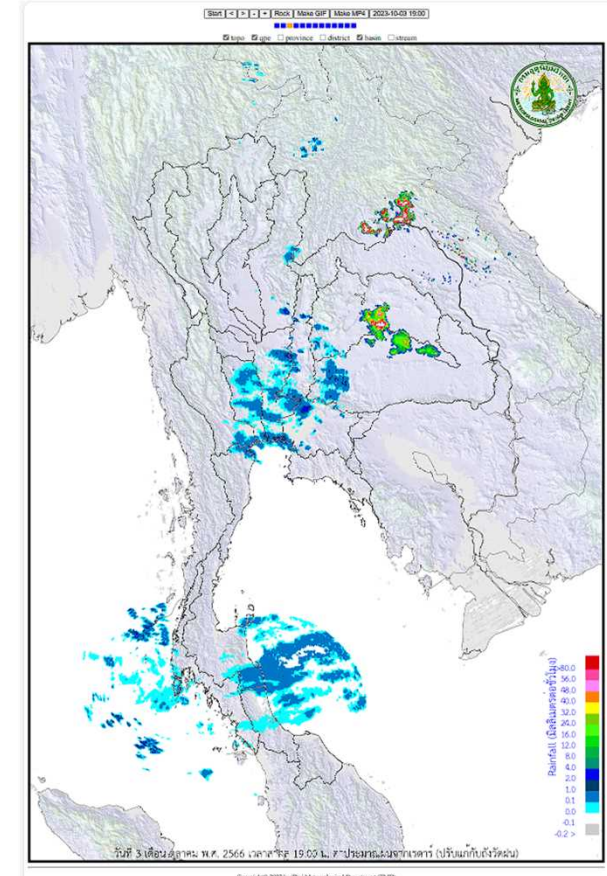
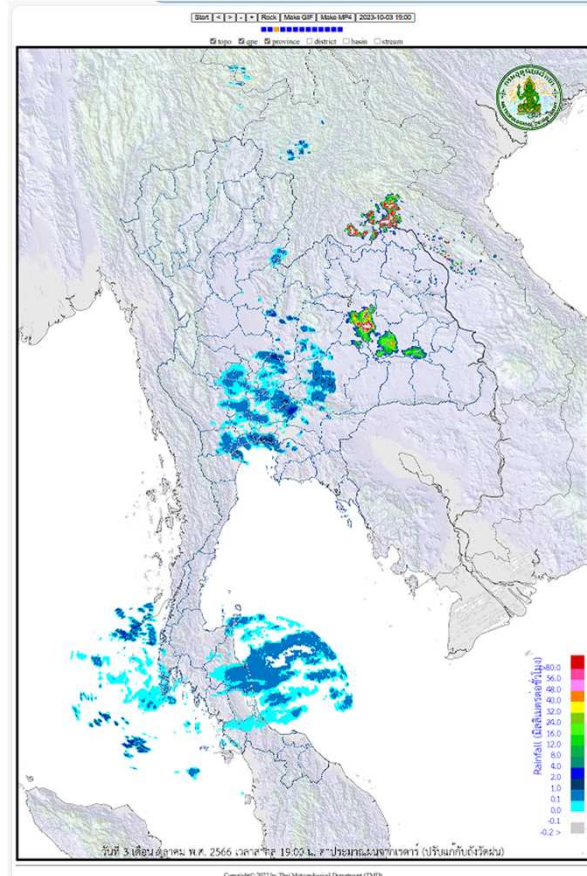
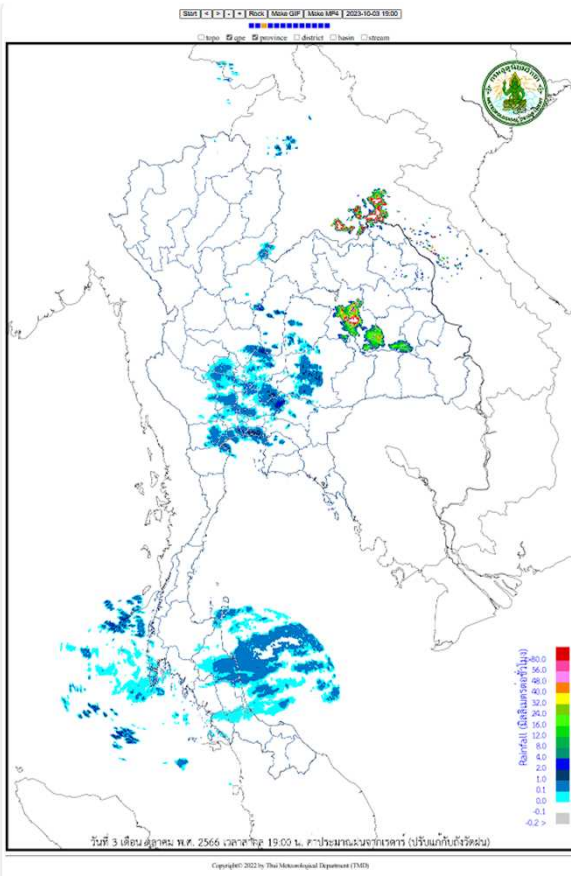
# Utilization and application of weather radar data

## Nationwide RADAR Composite



# Utilization and application of weather radar data

## Nationwide RADAR QPE





# Utilization and application of weather radar data

## ASCII for ArcGIS



Website :: <https://weather.tmd.go.th/>

Direct URL :: [https://weather.tmd.go.th/composite/compositeQPE\\_VTBB\\_latest.asc.zip](https://weather.tmd.go.th/composite/compositeQPE_VTBB_latest.asc.zip)

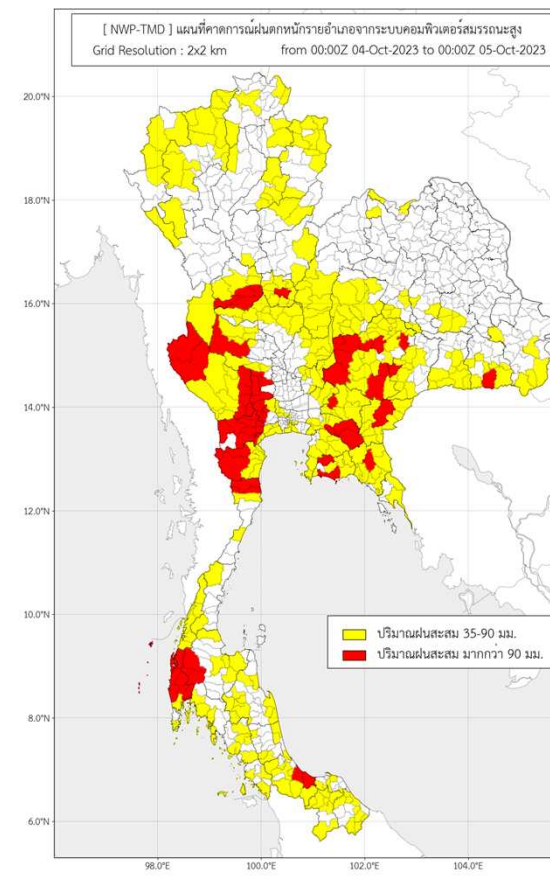
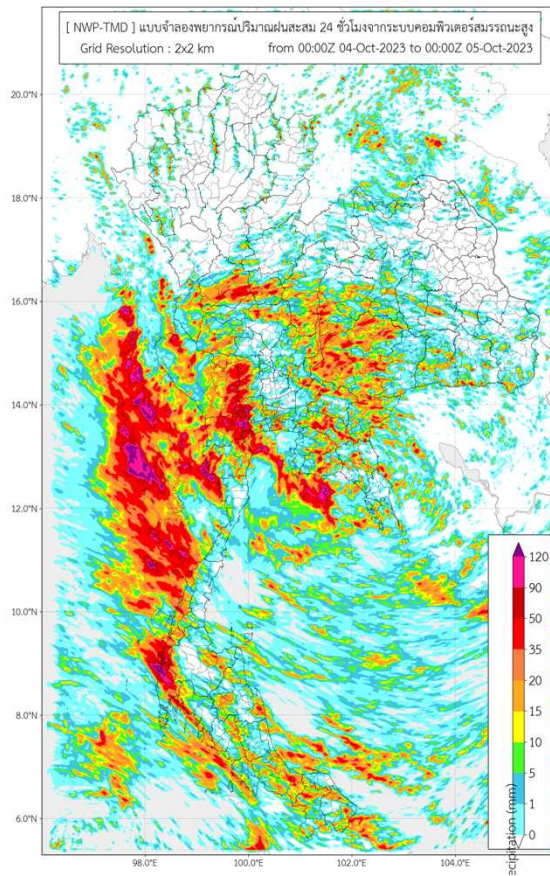




# *Technical challenges and plan for weather radar*

# Technical challenges and plan for weather radar

## Riskmap of QPE Data

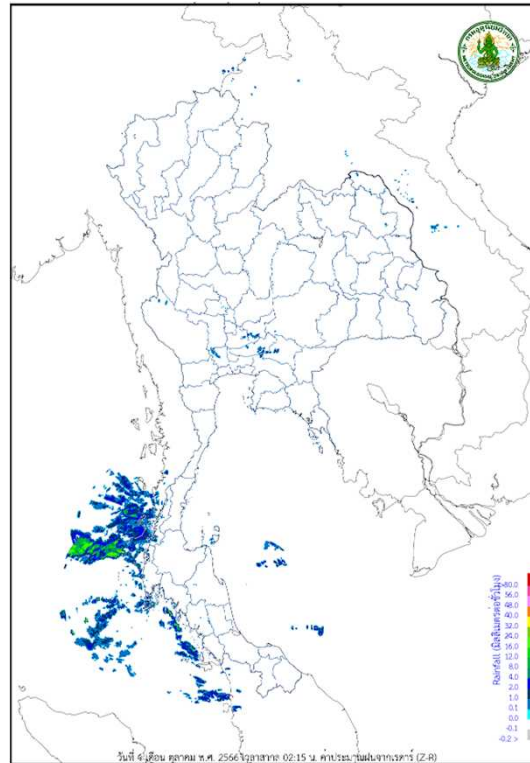




# Technical challenges and plan for weather radar Nowcasting System



**A.I.  
implementation**



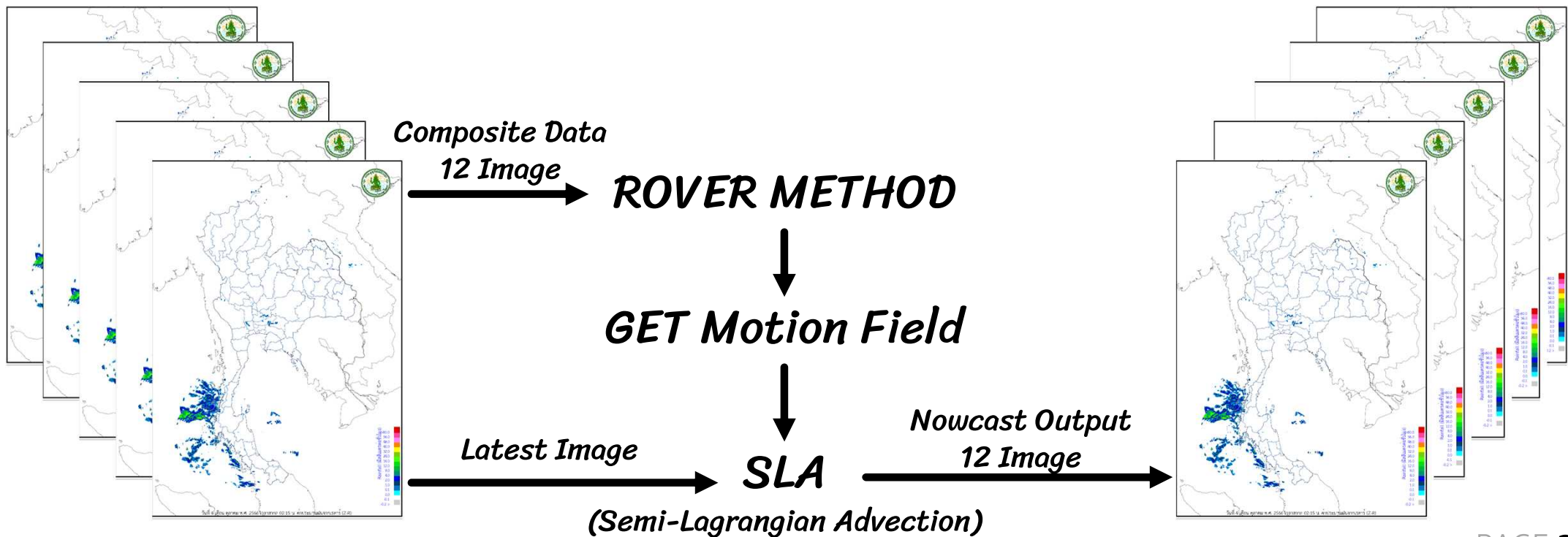
**Radar  
Nowcasting**

**Nationwide RADAR Composite**

# Technical challenges and plan for weather radar Nowcasting System



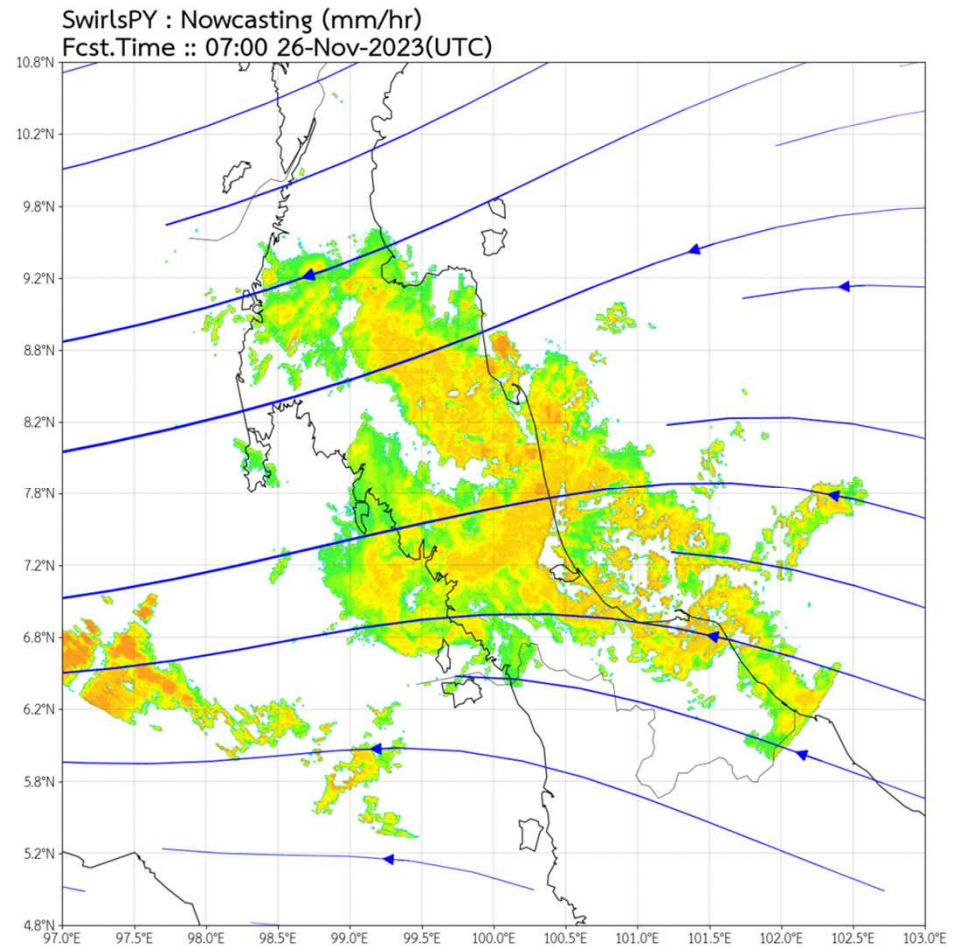
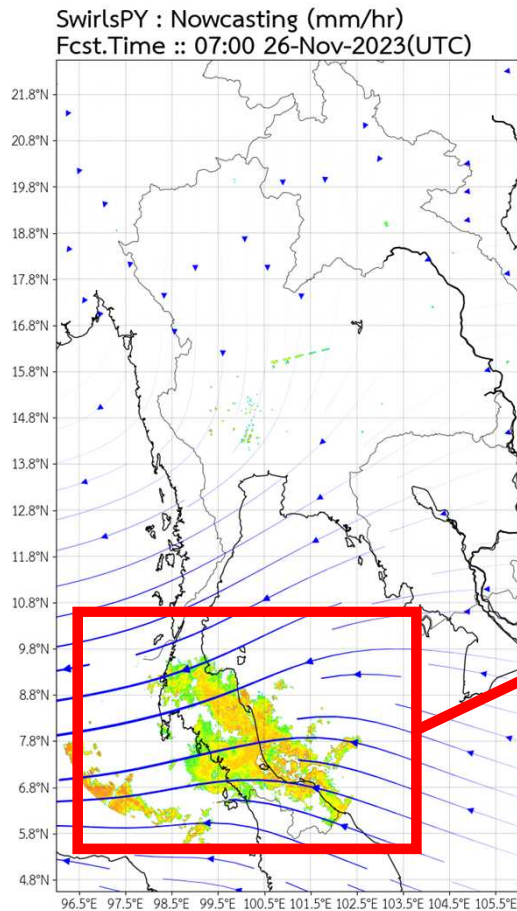
## ROVER [Real-Time Optical Flow by Variational Methods for Echoes of Radar]



# Technical challenges and plan for weather radar



## Nowcasting System



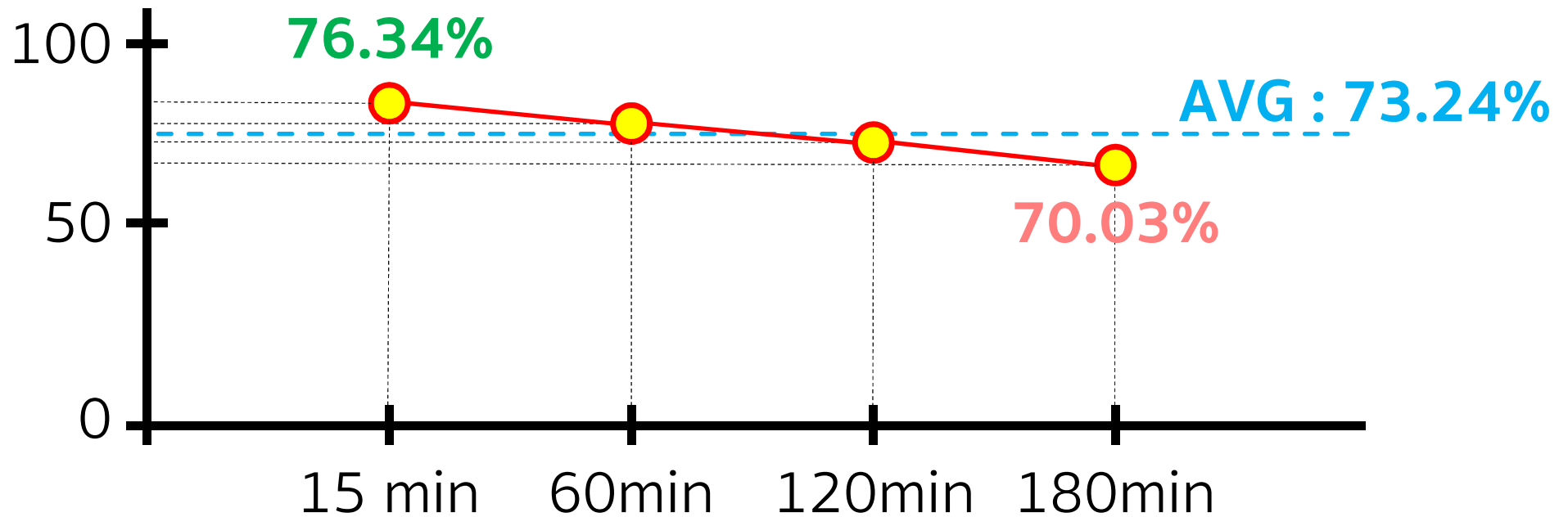
# Technical challenges and plan for weather radar



## Nowcasting System

### Verification : Percent Correct

JJAS 2018 - 2022



# *Technical challenges and plan for weather radar Nowcasting System*



- Improvement Percent Correct to 80-85% for implementation
- Using Other Method Ex. ConvLSTM ---

**DEEP LEARNING !!**





*Thank You for Attentions*