



HYDROMETEOROLOGICAL AND ENVIRONMENTAL INDUSTRY ASSOCIATION

WMO-HMEI Collaboration

First Mile Workshop

19 February 2024

Agenda item 3.2, HMEI members' perspective
Jorma Islander | Member of HMEI

Challenges in First-mile Data Collection from Automatic Observing Platform



Automatic Observing Platform point of view

- ❖ Telemetry options
- ❖ Data content
- ❖ Reporting format
- ❖ Cyber security

Challenges in First-mile Data Collection from Automatic Observing Platform



❖ Telemetry options

❖ Low Bandwidth

❖ Low speed Satellite

Goes, Meteosat, Iridium SBD, Argos

❖ Serial

RS485, RS232, VHF/UHF radio

❖ High Bandwidth

❖ TCP-IP based

Fiber optic, Copper Ethernet, 4G Cellular, Satellite

Challenges in First-mile Data Collection from Automatic Observing Platform



❖ Data Content

❖ Today's Processing capacity allows in-situ QC

Measurement quality information is available

❖ Metadata

Sensor details, calibration, siting classification

Shall each measurement include quality flag ?

Challenges in First-mile Data Collection from Automatic Observing Platform



❖ Reporting format

❖ What kind of data shall be supported ?

❖ Basic weather parameters

❖ Profile data

Ceilometer reflection profile, Precipitation droplet size distribution, Wind Lidar profile

❖ Eddy covariance data

Challenges in First-mile Data Collection from Automatic Observing Platform



❖ Cyber security

❖ Important for IP based communication in open network

❖ Secure protocols

❖ Authentication

❖ Security keys

Challenges in First-mile Data Collection from Automatic Observing Platform



❖ Main pain points

- ❖ Current reporting standards are not good enough
- ❖ Institutes are using own specific reporting standards
- ❖ Lack of metadata and QC definitions
- ❖ One standard does not cover all needs
- ❖ Missing industrial standards



Thank You
