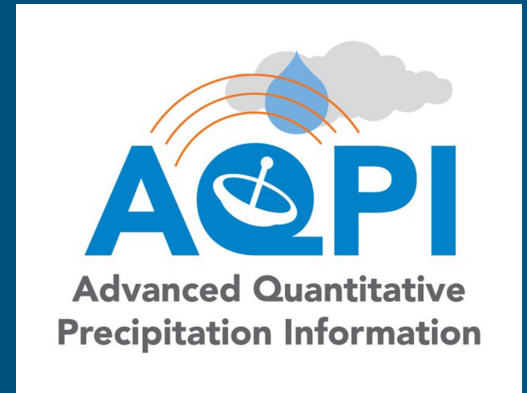# AQPI Data Implementation Working Group (DIWG)

Rebecca Pluche SFPUC Water Supply - Technical aspects of FTP data transfer, use cases for Water Supply

Mira Chokshi SFPUC Wastewater - Digesting the Data and Wastewater applications

Hilary/Greg Pratt/Michael Leon - Update - Machine to Machine - What's available and how to read it; Graphics - What's coming soon!

Monthly meeting - Jan 20, 2021

Machine-to-Machine Data Availability Status

1) Available today
   a) Shortrange (1-18 Hour) forecasts from the High-Resolution Rapid Refresh model updated hourly.
      i) Hourly Precipitation Accumulations
      ii) 15-minute Precipitation Rates
   b) Medium range (3 hours - 10 Days) forecast from the Global Forecast System model updated every six hours.
      i) Total accumulations for model run.
2) Coming in February
   a) Surface Observations updated every five minutes
   b) Radar Observations updated every two minutes
      i) 15-Minute Precipitation Accumulations
      ii) 1-Hour Precipitation Accumulations
      iii) Precipitation rates
   c) National Water Model Forecasts updated hourly
      i) Channel Flow Forecasts
   d) Coastal Inundation Forecasts updated hourly
      i) Inundation map forecasts
      ii) Channel Flow Forecasts

Monthly meeting - Jan 20, 2021

Processing AQPI Data Files

1) Initial draft of the "AQPI Data File Specification" will be released today.
2) Continual evolution
   a) Updates from user feedback welcome and needed.
   b) Updated to capture new data sets as added.
   c) Refinements based on improvements to data sets and standards being developed.

interrupting the values found on the header values line. The data description line contains the following text "PointID,Latitude(degrees),Longitude(degrees),forecastValue1,forecastValue2, …,forecastValuenumForecasts". This line is the description for interrupting each value found on each data line.

Example Atmospheric Forecast Point Precipitation Accumulation File:

dateTime:202101191800   ← Date Time Line
numPoints,numForecasts,forecastPeriod,units ← Header description line
40,54,3hx28:6hx26h,mm ← Header values line
PointID,Latitude(degrees),Longitude(degrees),forecastValue1,forecastValue2, …,forecastValuenumForecasts ← Data description line
Rain1,37.3486,-121.63,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1.375,1.625,2.8125,4.25,4.9375,5,5,5,5,5,5,5.375,8.625,8.8125,10,11.0625,
11.1875,11.1875,11.1875,11.5625,12.8125,18.8125,29.125,48.75,63.25,70.5625,73.0625,74.4375,79.25,83.125,83.125
Rain2,37.5136,-121.54,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.5625,1.625,3,3.75,3.8125,3.8125,3.8125,3.8125,3.8125,3.8125,
4.125,7.6875,8.1875,8.6875,9.5625,9.9375,9.9375,9.9375,10.25,10.8125,14.8125,22.75,38.8125,50,56.875,59.875,61.125,65.0625,68.625,68.6
875
Rain3,37.5615,-121.683,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.0625,0.9375,1.0625,2.1875,4.125,5,5.0625,5.0625,5.0625,5.0625,5.0625,
5.0625,5.0625,5.8125,9.125,9.3125,10.1875,11.375,11.5625,11.5625,11.5625,11.75,12.8125,19.3125,31.3125,54.0625,64.25,69.6875,70.8125,
71.875,76.4375,79.125,79.1875
…
…   ^
…   Data Lines
Rain40,37.6954,-121.683,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.125,0.5625,0.6875,1.9375,4.375,4.9375,4.9375,4.9375,4.9375,
4.9375,4.9375,4.9375,6.3125,9.9375,10.0625,10.5625,11.1875,11.3125,11.3125,11.4375,12.0625,17.4375,27.4375,48.75,55.9375,59.3
75,59.8125,61.3125,66.375,68.3125,68.3125

Date Time Line:
dataTime:202101191800 — This line added to ensure uniqueness. 202101191800 should match the file time portion of the file name and is the time stamp of the initialization time for the model run which is January 19, 2021 @ 18:00Z.

Header Description Line:
numPoints,numForecasts,forecastPeriod,units

Header Values Line:
40,54,3hx28:6hx26h,mm

numPoints = 40 is the number of data points the user would like forecast values for and should match the number of data lines.

numForecast = 54 is the number of forecast values for that should be provided for each of the 40 points.

forecastPeriod = 3hx28:6hx26h provides the forecast period length for each of the 54 forecast provided for each user selected point. There are 28 3-hour forecasts followed by 26 6-hour forecasts. 26+28 should = numForecast = 54.

Units = mm the accumulation values are provided in millimeters

TBC --- User would like this to be in inches

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Network of Bay Area Water Agency Users, USGS CoSMoS, NOAA Research, NOAA NWS

Build out of Graphics Timeline

1) Separate interface for data selection (machine-machine) and graphics
2) Each product will have its own graphical display to start
3) Combine images to one display
4) Mouse over interrogation of underlying graphical data

Status of AQPI Graphical Display User Interface

1) AQPI Server Side
   a) Auto Imaging WORKING!!!!!
   b) Ability to display the following
      i) Surface observations
      ii) Radar Observations
         (1) Precipitation Rate
         (2) 15-Minute Precipitation Accumulation
         (3) 60-Minute Precipitation Accumulation
      iii) Atmospheric Forecasts
         (1) Short and Medium Range Precipitation Accumulation
         (2) Short Range Precipitation Rates
   c) Enhancements to Server Side for February
      i) National Water Model River Flow Forecasts
      ii) Coastal Inundation
         (1) Inundation Map Forecasts
         (2) River Flow Forecasts

Status of AQPI Graphical Display User Interface

1) AQPI Client Side
   a) Working on Client Graphical Displays
      i) First displays late February
      ii) First release separate displays for each product.
      iii) March start merging displays.
      iv) March-April mouseover interrogation of images.

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