

# C-CORE 1.12 Visibility

## Visibility

### Challenge

Challenge ID	C-CORE_OFF1.12
Title	Visibility
Challenge originator:	
General Description	
What data/products do you use?	<p>Visibility data are largely limited to surface-based observations from ships and buoys. The historical records of observed visibilities are available via UCAR (ICOADS) and NOAA (NDBC).</p> <p>Real-time and near real-time observations of visibility data are available from many sources including NOAA (NWSTG), NOAA (MADIS), NOAA (NDBC), UCAR, and numerous other data distribution centers.</p>
When do you use this kind of dataset?	<p>Visibility data are important in areas prone to frequent reduced visibility. Reduced visibility might slow down operations, tows, stop helicopter operations and other operations that require a certain visibility. Data are used to qualify and quantify the means and extremes of visibilities, and (b) managing risks related to visibility, safeguarding lives, protecting assets, and conducting operations.</p>
What are your actual limitations and do you have a work around?	<p>The temporal and spatial resolutions of surface-based observations significantly limits the availability of visibility data. Unless ships or buoys observe and report visibility data, visibilities are not readily available for analysis over vast areas of the ocean.</p> <p>Hard to use for other purposes than real-time observations, historical data are mostly ground observations, often manual and not very accurate. And when automatic, the cause of low visibility is not easily available (precipitation or fog?). Estimates have to be made.</p> <p>Better resolution, more frequent observations (hourly, 15 mins), better algorithms to separate fog from cloud.</p>
Needs and expectations on EO data	<p>EO is used for this today and probably the best source to assess the geographical extent of for instance fog. However the resolution and frequency of observations in some regions needs improvement. Also, tools to distinguish for instance fog from other clouds needs to be improved.</p> <p>Specific need: Time-series of surface-based visibility data. Better algorithms to distinguish fog from cloud etc.</p>
Challenge classification	
Pre license	1
Exp.	3
Dev.	3
Prod.	4
Decom.	2
Geographic context/restrictions	<p>Applies to all six areas of interest.</p> <p>Seasonality: Applies to all seasons.</p>

<b>Topographic classification / Offshore classification</b>	Ocean
<b>Activity impacted /concerned</b>	
<b>Technology Urgency</b>	Short term (2-5 years)
<b>Information requirements</b>	
<b>Update frequency</b>	Hourly or 15 hourly.  Available: Geostationary: Real-time or near real-time observations are available sub-hourly. Polar orbiting rarer. Historical observations are generally updated once per month, for the previous month.
<b>Temporal resolution</b>	Sub-hourly and less frequently.
<b>Spatial resolution</b>	4 km Available: Observations are available based on the location of the ship/buoy observation, therefore the spatial resolution varies greatly.
<b>Data quality</b>	The selected sources in this document are selected because they are known to have sufficient quality (after some work arounds and adaptations). In general separate indepth verification studies has to be made for each source planned to be used for analysis, and the analysis has to be repeated for each geographical area (since sources might be of sufficient quality in one area but not another).
<b>Data Coverage and extent</b>	Regional
<b>Example format</b>	Surface-bases observation: text, CSV and/or netCDF
<b>Timeliness</b>	Hourly/15 mins.
<b>Existing standards</b>	Paragraph C.6.11.3 of ISO 19901-1:2005(E) indicates that visibility below 1 km affects flying (e.g., helicopter operations in support of missions).

## Relevant products

### Content by label

There is no content with the specified labels