# ST-VAL issues – GHRSST-XVII

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# Key points

- SSES and Quality Level
  - Quality Level:
    - Summary of QL derivation by different providers
    - QL need to be consistent across sensors and GDS v2 definition needs to be followed

# Current QL Documentation

## GDS2.0

"The L2P variable '**quality_level**' shall use an incremental scale from 0 to 5 to provide the user with an indication of the quality of the L2P SST data. The value 0 shall be used to indicate missing data and the value 1 shall be used to indicate invalid data (e.g. cloud, rain, too close to land - under no conditions use this data). The remaining values from 2-5 are set at the discretion of the L2P provider with the proviso that the value 2 shall be used to indicate the worst quality of usable data and the value 5 shall be used to indicate the best quality usable data. The L2P provider is required to provide a description of the quality levels provided as part of the product documentation."

# Key points

## SSES

- Summary of estimation methods by providers
- Discussion on if both sses_bias and sses_standard_devaition are used by L4 producers
- Discussion showed the need for clarifying the SSES definition in the GDS (e.g. What is SST – sses_bias? Subskin or Skin?) as rather vague
- GDS2.0 refers to GHRSST web site: https://www.ghrsst.org/ghrsst/tags-and-wgs/stval-wg/sses-single-sensor-error-statistics/
- SSES bias and std deviation do not allow for the separation of random and systematic effects
  - See proposal next page

# Proposal on SSES and uncertainty information in L2p (C Merchant):

- Leave SSES as they are (bias and standard deviation to a reference)

- Add uncertainty information (split into random and systematic) to the experimental fields

- Have a 5/10 year horizon to update GDS (next major version) to phase SSES out and have compulsory uncertainty fields

# Actions

- ACTION 1: Sasha Ignatov
  - provide feedback to Sasha Ignatov on new iQUAM2 L2i proposed format by 31 Aug 2015
- ACTION 2: All data producers
  - provide STVAL Chair with a page on how QL are derived by 6th Aug 2015 (to appear in G-XVI Proceedings)
- ACTION 3: All ST-VAL;
  - reword GDS on SSES for consistency and clarity
- ACTION 4: All (ST-VAL);
  - Decide on the CM proposal
    - All, including EARWiG?
    - DAS-TAG?

# SSES Definition

**Single Sensor Error Statistics** (SSES) are based on understanding errors associated with a specific satellite instrument and errors associated with the geophysical retrieval of SST for each individual satellite scene. The simplest L2P SST uncertainty estimation is based on matching satellite SST with in situ observations co-located in space and time to within 25 km and 6 hours. A large match-up database of data is required for each satellite instrument which is then periodically analyzed to derive a mean bias and standard deviation for each satellite system. (Only documented in https://www.ghrsst.org/ghrsst/tags-and-wgs/stval-wg/sses-single-sensor-error-statistics/ - Needs updating!)