



ships4sst
shipborne radiometers for sea surface temperature

PROJECT AIM

To sustain and evolve the International SST FRM Radiometer Network (ISFRN)

OBJECTIVE 1

Deploy and maintain shipborne thermal infrared (TIR) FRM radiometers and necessary supporting instrumentation to validate satellite SST products.

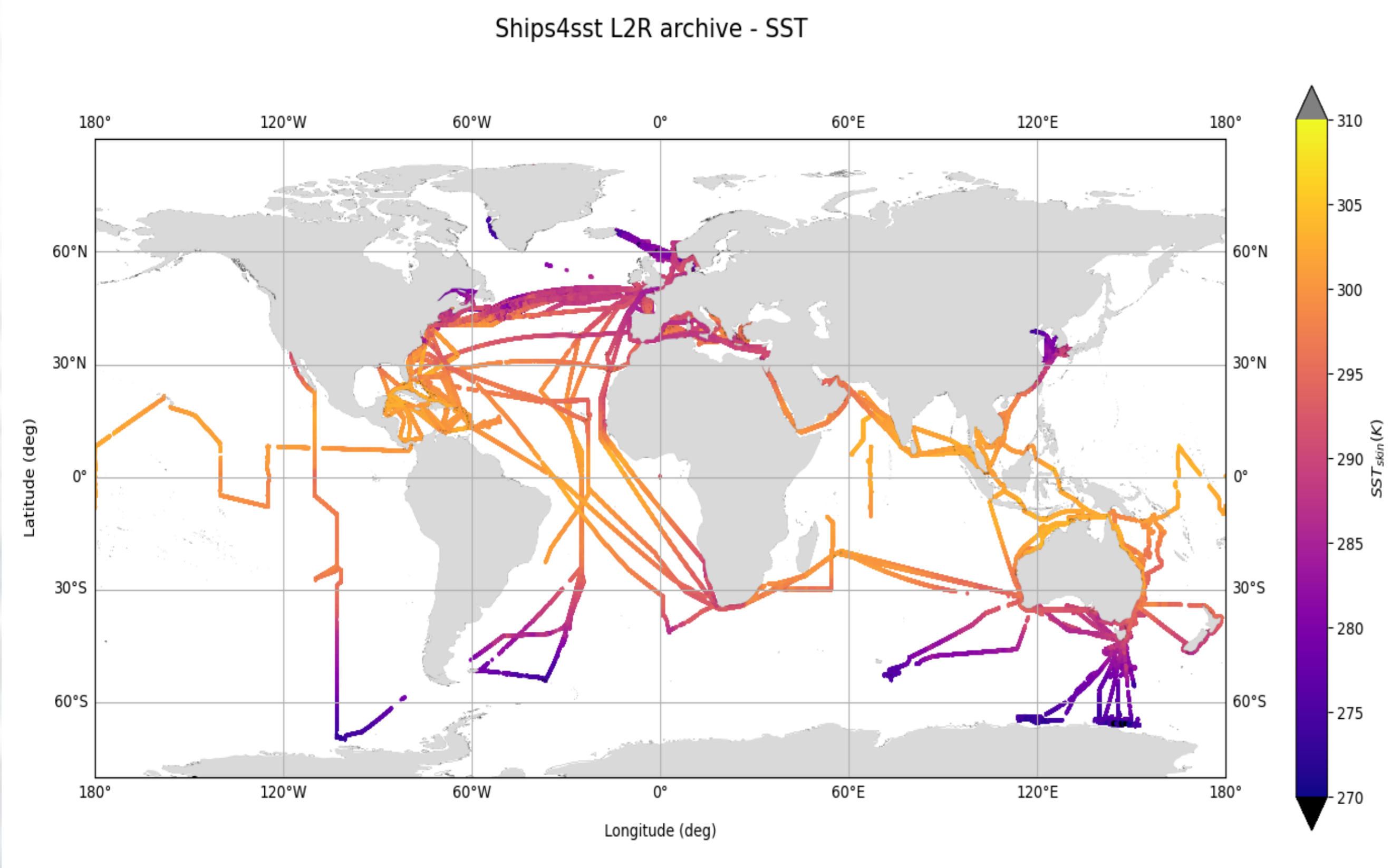


Figure 1 shows a world map of the SST skin data obtained by the ISFRN network's ISARs, SISTeR and M-AERI instruments.

The instruments are operated continuously and autonomously, and measurements are made continuously, except in conditions of rain or excessive spray when the instrument shutters close automatically for protection.

OBJECTIVE 2

Maintain Fiducial Reference Measurement (FRM) protocols for satellite SST measurements and uncertainty budgets.

OBJECTIVE 3

Process, quality control, archive and deliver approved FRM4SST data sets following documented FRM procedures and approve their use for FRM satellite validation.

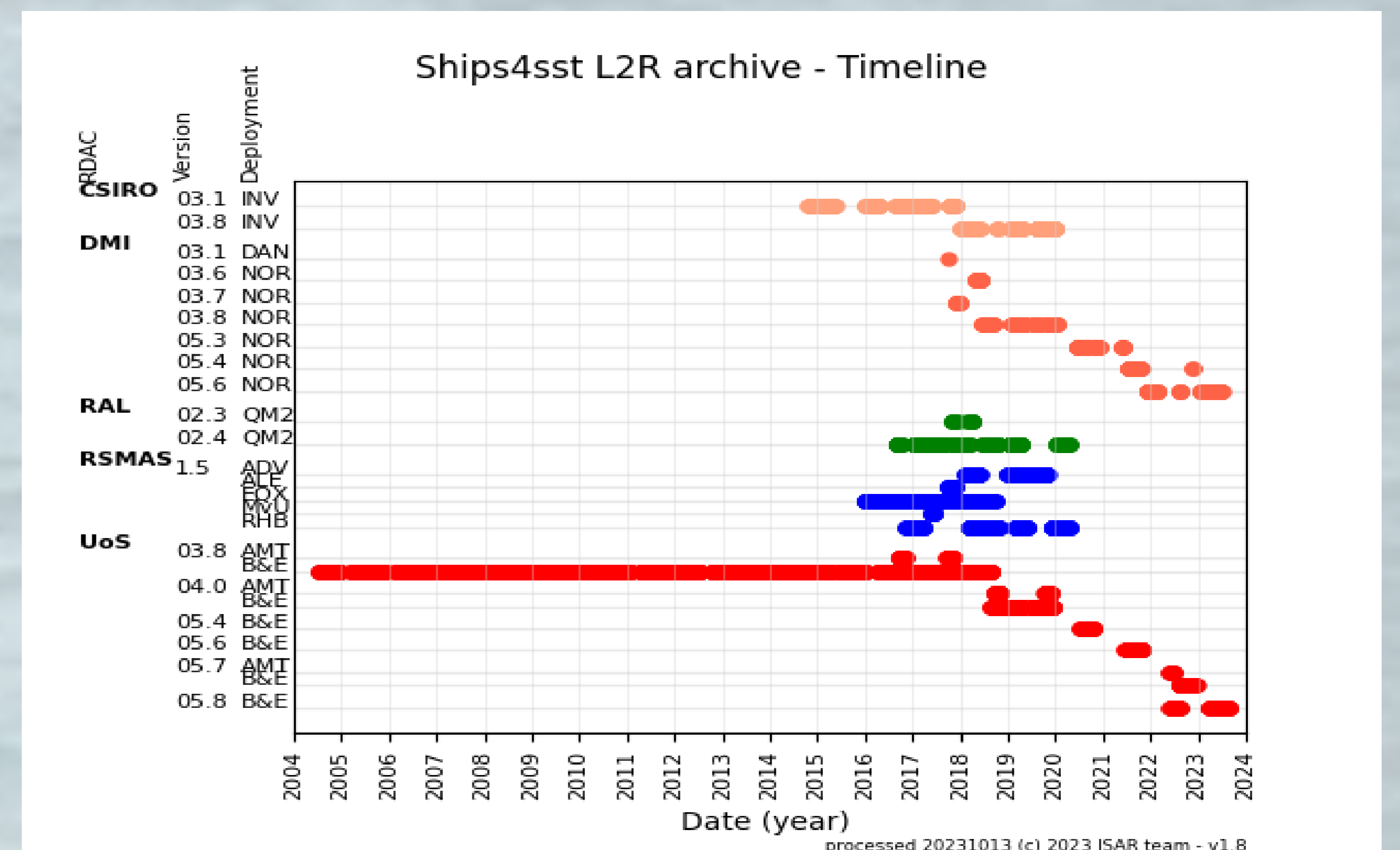


Figure 2 shows the timeline of the processed L2R data that is available for download on the ships4sst archive, shown by RDAC, processing version number and deployment.

L2R files and uncertainties are produced by each partner and submitted to an archive on Ifremer. These are accessible via the ships4sst website. MDB files are produced by Felyx and then analysed by the ISFRN.

The lower volume of data in 2021 and 2022 is due to the slow recovery of some shipping operators during and after the COVID lockdowns.

OBJECTIVE 4

Validate satellite SST products to FRM standards and publish monthly results.

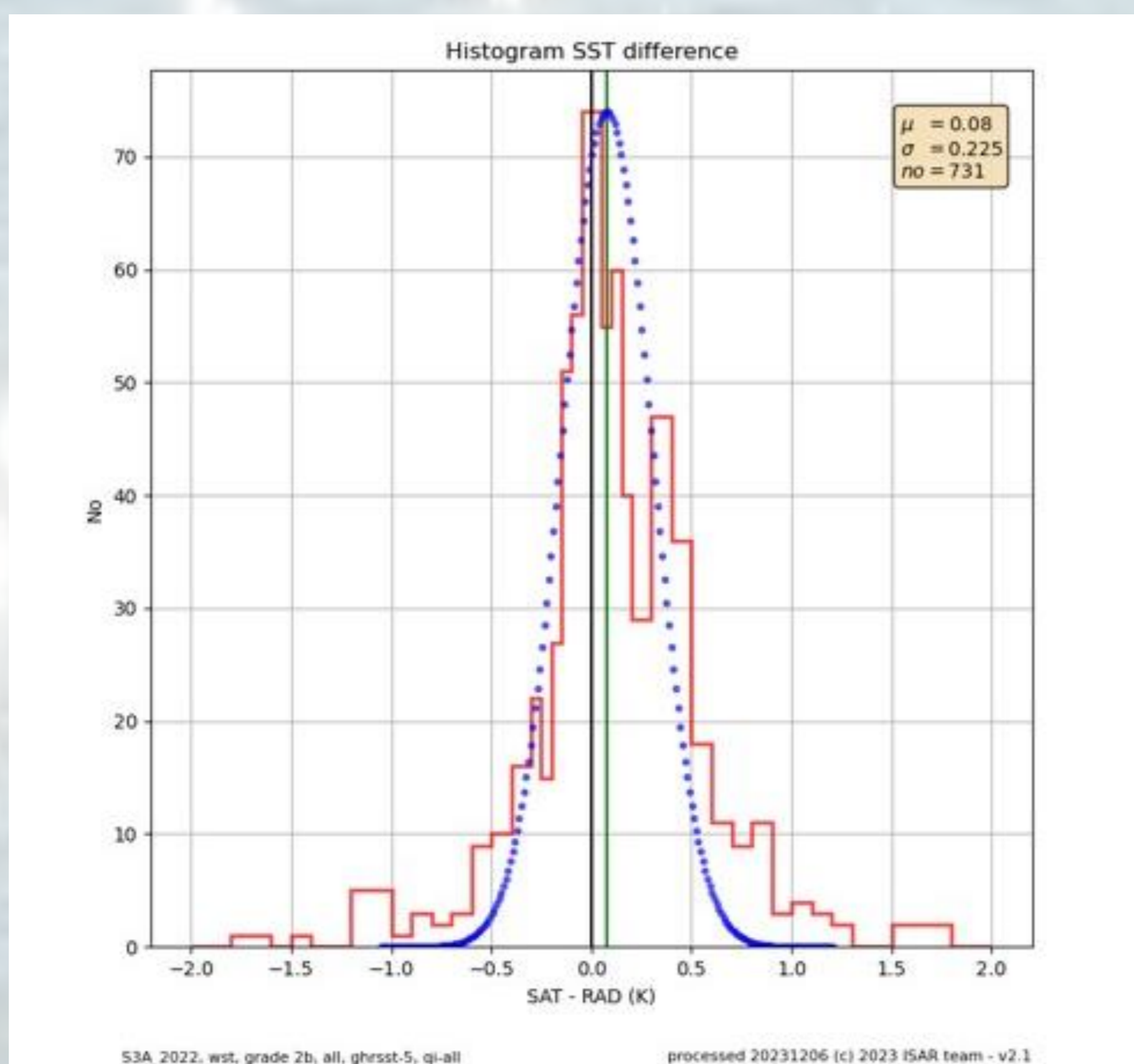


Figure 3: Sentinel 3A histogram showing the difference in SST data between SLSTR S3A and ships4sst, day and night during 2022.

The shipborne radiometer data are fiducial reference measurements (FRM) and are near-contemporaneous with satellite data from the SLSTR-A and SLSTR-B instruments, and so can be effectively used to validate the L1, L2 and higher order SST products from the SLSTR on S3-A and S3-B. Recent validation of SLSTR with the FRM data show very good results for SLSTR.

OBJECTIVE 5

Promote the FRM4SST outputs and maintain the International SST FRM Radiometer Network (ships4sst).

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