The difference between L1X and L1B in FTS product

May 24, 2016

JAXA/SAOC

1. Purpose

This document provides the diffrence between L1B product and L1X product in GOSAT TANSO-FTS Level-1 product.

The L1X product began to be created from V200.

2. What is the L1X?

The L1X is defined Near Real Time(NRT) product of L1B product. JAXA changed below items to V201 L1B product from V161 L1B product .

1. Inclusion CAM data.(FTS onboard camera data with jpeg format.)
2. Addition of target point classification.
   (e.g. Megacity, Volcano, Contrail, Validation & Caliburation Point, etc.).
3. Addition of best-estimate pointing-location considering pointing offset.

If JAXA apply these changing point to making V201 L1B product, JAXA need 2 or 3 weeks for determining the new posteriori information from observation time. Therefore, JAXA defined L1X product as NRT product for users who needs timely. So, L1X does not include CAM data, best-estimate pointing-location, and target point classification. *****

[*About preparing CAM data and best-estimate pointing-location]

The CAM data will be available one day later after JAXA has made L1X product.

When FTS sensor's pointing offset fluctuates related to time, the best-estimate pointing-location, that is correction parameter, will be made 2 or 3 weeks later after JAXA has made L1X product.

However, FTS sensor's pointing offset has not fluctuated from Jan. 2015 fortunatelly. Therefore, after V200 released, L1B product is made 1~4 days after JAXA made L1X product.

In the future, if FTS sensor's pointing offset fluctuates, L1B will be made 2 or 3 weeks later after JAXA make the L1X.

The time line of distribution L1X and L1B is shown in figure.1, figure.2.

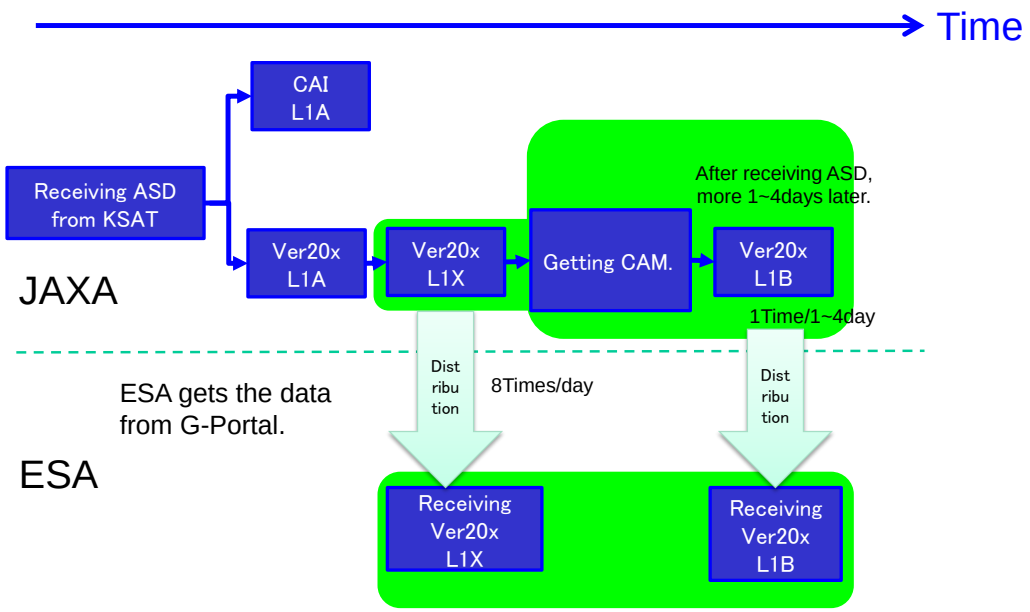

figure.1. The time line of distribution L1X and L1B (The pointing offset is not fluctuated)

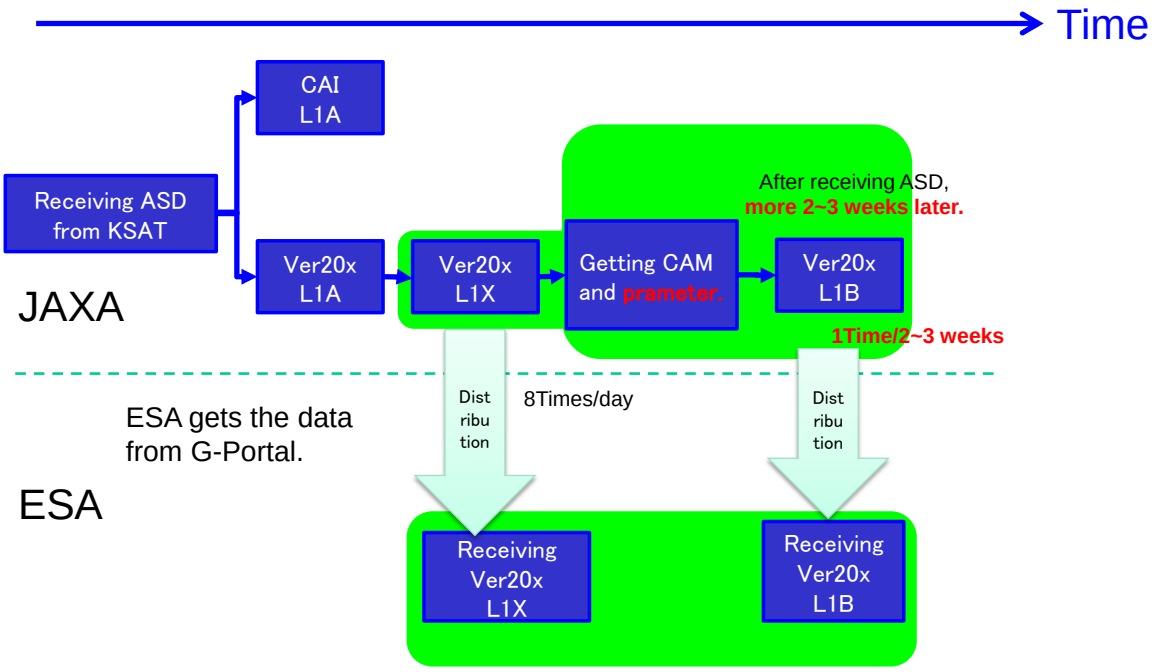

figure.2. The time line of distribution L1X and L1B (The pointing offset is fluctuated)

3. The difference datasets of L1B and L1X.

The difference datasets of L1X and L1B are shown Table.1. These differences depend on FTS sensor's fluctuation of pointing offset.

Currently (May, 2016), FTS sensor's pointing offset does not fluctuate. Therefore, the difference of L1B and L1X is only CAM data.

If pointing FTS sensor's offset fluctuates, the differences of L1B and L1X will be a lot of datasets (please refer Table.1) .

Table.1. The list of difference datasets of L1B and L1X

No.	Dataset	Stored data in L1X	
		Current (The pointing offset is not fluctuated)	Future (If the pointing offset is fluctuated)
1	/ancillary/geometricInformation_BestEstimated/centerLatitude_BestEstimated	The same value as L1B	Invalid value
2	/ancillary/geometricInformation_BestEstimated/centerLongitude_BestEstimated	The same value as L1B	Invalid value
3	/ancillary/geometricInformation_BestEstimated/eastLatitude_BestEstimated	The same value as L1B	Invalid value
4	/ancillary/geometricInformation_BestEstimated/eastLongitude_BestEstimated	The same value as L1B	Invalid value
5	/ancillary/geometricInformation_BestEstimated/northLatitude_BestEstimated	The same value as L1B	Invalid value
6	/ancillary/geometricInformation_BestEstimated/northLongitude_BestEstimated	The same value as L1B	Invalid value
7	/ancillary/geometricInformation_BestEstimated/southLatitude_BestEstimated	The same value as L1B	Invalid value
8	/ancillary/geometricInformation_BestEstimated/southLongitude_BestEstimated	The same value as L1B	Invalid value
9	/ancillary/geometricInformation_BestEstimated/westLatitude_BestEstimated	The same value as L1B	Invalid value
10	/ancillary/geometricInformation_BestEstimated/westLongitude_BestEstimated	The same value as L1B	Invalid value
11	/exposureAttribute/geometricInfo_BestEstimated/bestEstimatedPointingOffset	The same value as L1B	Invalid value
12	/exposureAttribute/geometricInfo_BestEstimated/listOfEstimatedPositionOffset	The same value as L1B	The name of used parameter fille
13	/exposureAttribute/geometricInfo_BestEstimated/moon/moonPos_FOV_Elongation_BestEstimated	The same value as L1B	Invalid value
14	/exposureAttribute/geometricInfo_BestEstimated/observationDirection/AT_Ang_BestEstimated	The same value as L1B	The value that is applied internal correction.
15	/exposureAttribute/geometricInfo_BestEstimated/observationDirection/CT_Ang_BestEstimated	The same value as L1B	The value that is applied internal correction.
16	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/atNLat_BestEstimated	The same value as L1B	Invalid value
17	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/atNLon_BestEstimated	The same value as L1B	Invalid value
18	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/atPLat_BestEstimated	The same value as L1B	Invalid value
19	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/atPLon_BestEstimated	The same value as L1B	Invalid value
20	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/centerLat_BestEstimated	The same value as L1B	Invalid value
21	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/centerLon_BestEstimated	The same value as L1B	Invalid value
22	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/ctNLat_BestEstimated	The same value as L1B	Invalid value
23	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/ctNLon_BestEstimated	The same value as L1B	Invalid value
24	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/ctPLat_BestEstimated	The same value as L1B	Invalid value
25	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/ctPLon_BestEstimated	The same value as L1B	Invalid value
26	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/landType_BestEstimated	The same value as L1B	Invalid value
27	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/listOfTargetCategory	The same value as L1B	The name of used parameter fille
28	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/satelliteAzimuth_BestEstimated	The same value as L1B	Invalid value
29	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/satelliteZenithAngle_BestEstimated	The same value as L1B	Invalid value
30	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/scatteringAngle_BestEstimated	The same value as L1B	Invalid value
31	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/sunglintGeometryConditionFlag_BestEstimated	The same value as L1B	Invalid value
32	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/targetCategory	The same value as L1B	Invalid value
33	/exposureAttribute/geometricInfo_BestEstimated/pointAttribute/viewingVector_BestEstimated	The same value as L1B	Invalid value
34	/exposureAttribute/geometricInfo_BestEstimated/pointingOffsetEstimationError	The same value as L1B	Invalid value
35	/exposureAttribute/geometricInfo_BestEstimated/sun/solarAzimuth_BestEstimated	The same value as L1B	Invalid value
36	/exposureAttribute/geometricInfo_BestEstimated/sun/solarZenithAngle_BestEstimated	The same value as L1B	Invalid value
37	/exposureAttribute/polarizationInfo_BestEstimated/muellerMatrix_SWIR_BestEstimated	The same value as L1B	0.0
38	/CAM/data_CAM	no dataset	no dataset
39	/CAM/fileSize_CAM	no dataset	no dataset
40	/CAM/index_CAM	no dataset	no dataset
41	/CAM/time_CAM	no dataset	no dataset
42	/exposureAttribute/numPoints_CAM	no dataset	no dataset

End of document