

ADEOS-II GLI Workshop 2000

OATSKD

Data Processing for Level-2A_OA

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Outline

- OATSKD definition
- Level-2A_OA concept
- OATSKD processing
- OATSKD revision points (from Dec.'99)
- Sample image of Level2A_OA
- Performance
- Summary

OATSKD definition

Algorithm name	Algorithm code	PI name	in charge of implementation
Data processing for Level-2A_OA	OATSKD	NASDA	Fujitsu

- **Scientists(PI) presented specification of Level-2A_OA.**
- **Fujitsu designed OATSKD based on the specification under the supervision of NASDA.**

GLI Level Definition (L1B to L2)

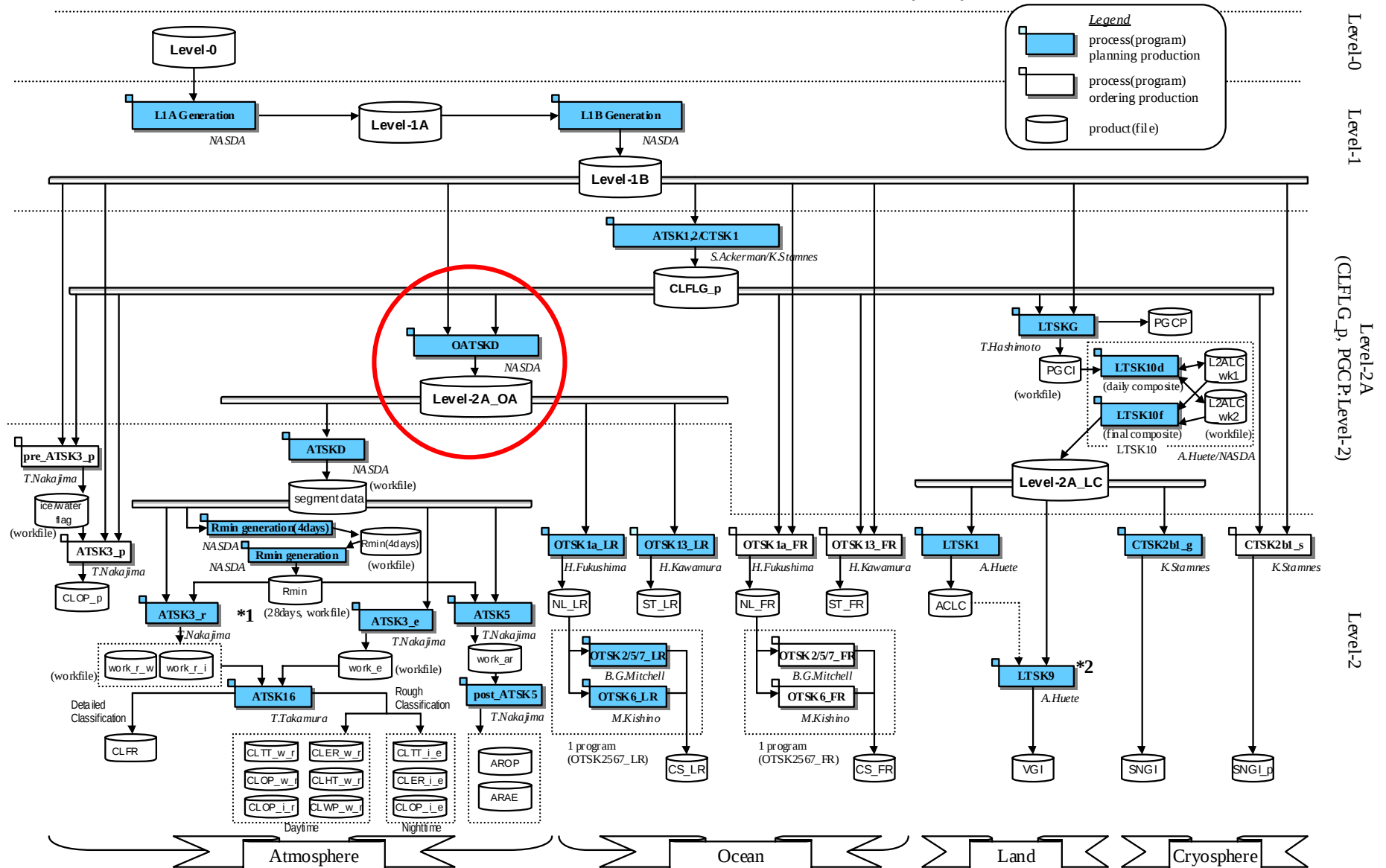
- Level-1B
- radiance data
 - radiometric/geometric corrected scene image (approx. 1600km × 1600km)
 - 4 products (VNIR, SWIR, MTIR, SATP)

- Level-2A
- radiance data
 - common and basic product for Level-2 processing
 - 2 products (Level-2A_OA, Level-2A_LC) *detail is shown later*

- Level-2
- geophysical parameters retrieved from Level-1B or Level-2A
 - 25 products as standard

GLI Standard Products Flow(1/3)

Ver.1.9b
Jun. 19, 2000

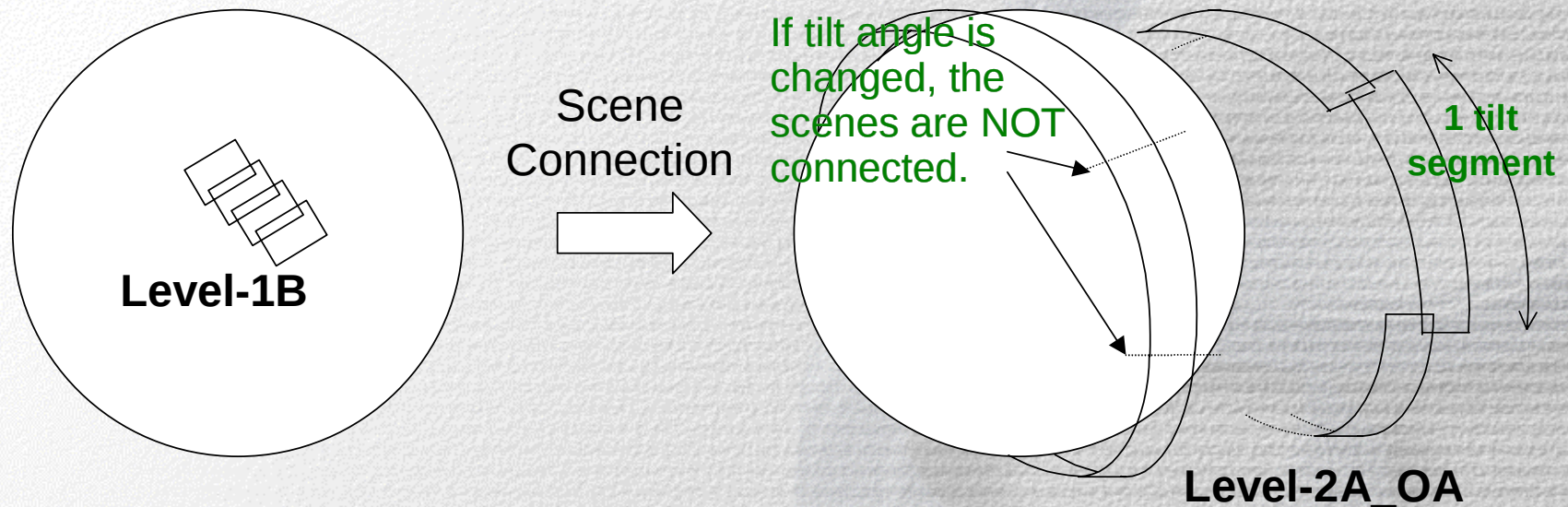


*1) ATSK3_r should be executed 2 times. One is to calculate *_w_r products and another is for *_i_r products.

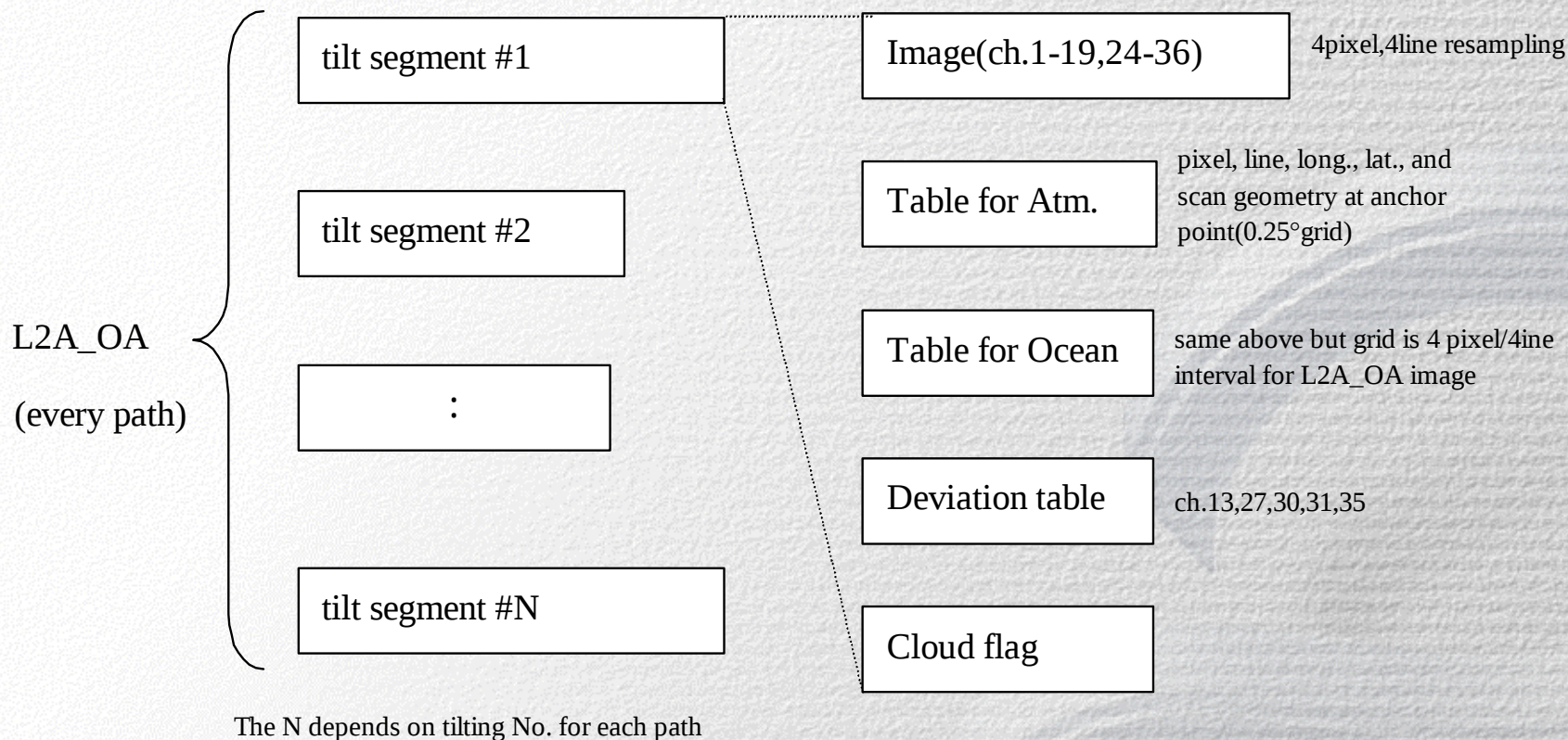
*2) The input data of LTSK9 is L2A_LC at the launch time. But ACLC will be used instead of L2A_LC after ACLC validated.

Level-2A_OA Concept

- 1 path data, not map-projected
 - 4pixel/line sampled (about 4km resolution), but deviation table of removed pixels are attached (ch.13, 27, 30, 31, 35 only)
 - ch.1-19, 24-36 (Total 32ch.s) and Cloud Flag, Land/Water Flag are included
- * 1path=101min.

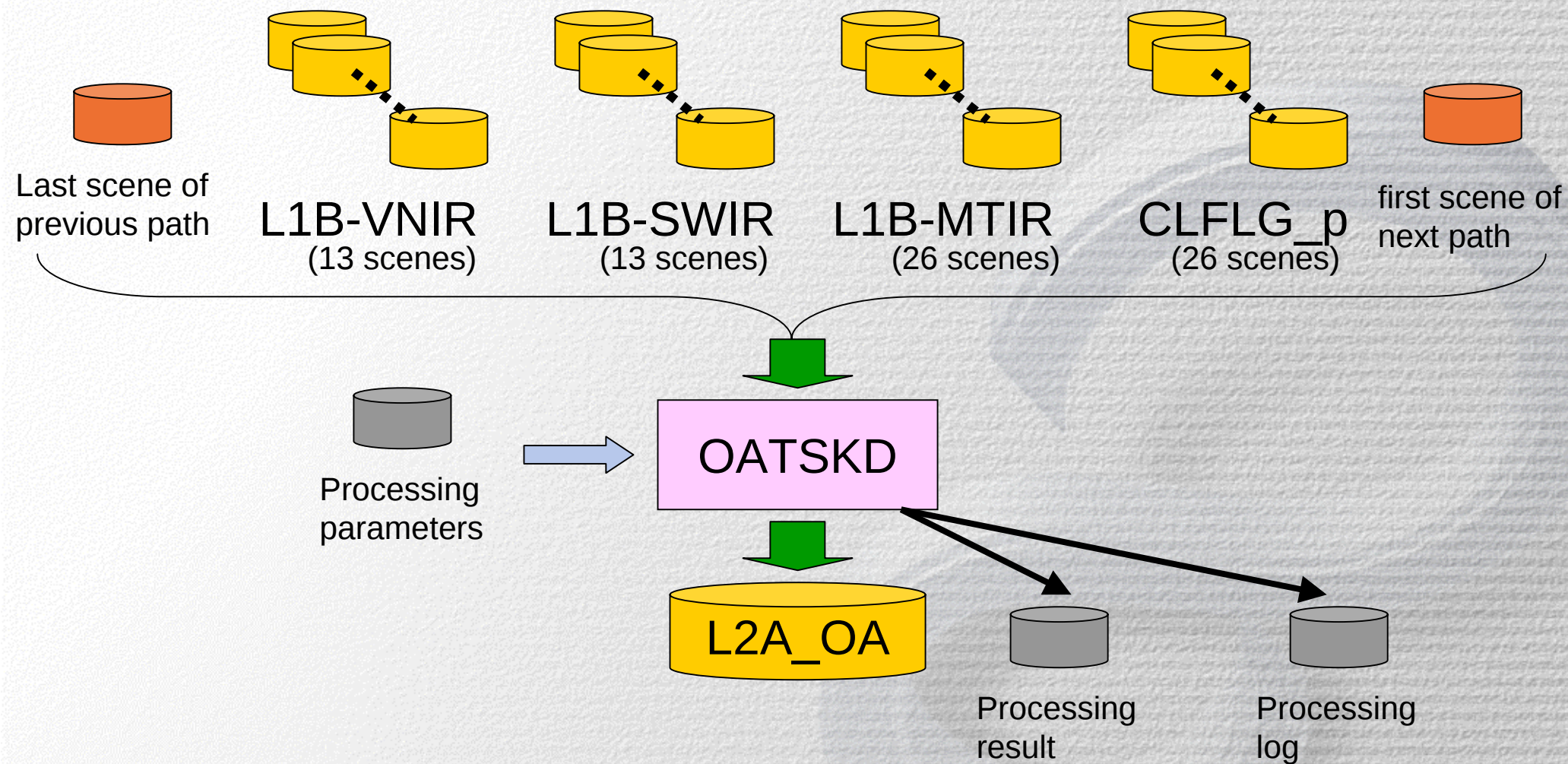


Level-2A_OA Contents



The # of lines of VNIR/SWIR channels are half of MTIR. Because there is no observation for VNIR/SWIR in night time.

OATSKD Input/Output Diagram





OATSKD processing

a) Connecting one path L1B data

- delete overlap between scenes
- insert dummy data if a scene is lucked
- avoid overlap between paths (last scene of previous path and first scene of next path are used for this purpose)
- orbit, attitude, black body information, etc. are also connected

b) Attaching two tables for latitude/longitude, scan geometry and observation time

- atmospheric supplement table: 0.25 degree grid for Atmospheric Segment Data
- ocean supplement table: 4 pixel/line interval for L2A_OA

c) Generating deviation table for specified channel

OATSKD revision points (*from Dec.'99*)

a) Revision points on external interface

- Latest L1B file specification is reflected
(Format of absolute calibration coefficients table is changed, etc.)
- Latest CLFLG_p file specification is reflected
(16bit -> 32bit)
- Latest L2A_OA file specification is reflected
(adding quality information, tilt segment time, etc.)
- System-related functions are added
(log functions, receiving processing parameters from system software, outputting process result files, etc.)

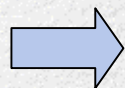
b) Revision points on data processing

- Improvement of latitude/longitude calculation from ocean supplement table
- Improvement of scene connection method

Level-2A_OA Sample Image

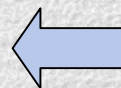
Used data: GSD
Date: Jun.2, 2000
Path No.: 8

Ch.30 (3.7 μ m)
Radiance data
Blue: low value
Red: high value



Scene 1

Scene 26

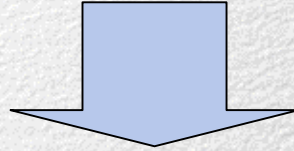


Land/Water flag
Magenta: water
Yellow: land

Scenes are successfully
connected.

Performance (tentative)

Measured time / 1 execution: 1,500 seconds



Measured time / 1 day:

6 hours

The execution time satisfies required performance.



Summary

- a. OATSKD was implemented as GLI operational software.**
- b. OATSKD presented GSD Level-2A_OA for checking of down stream algorithms (ATSKD, OTSK1a_LR and OTSK13_LR).**
- c. The execution time of OATSKD satisfies required performance.**