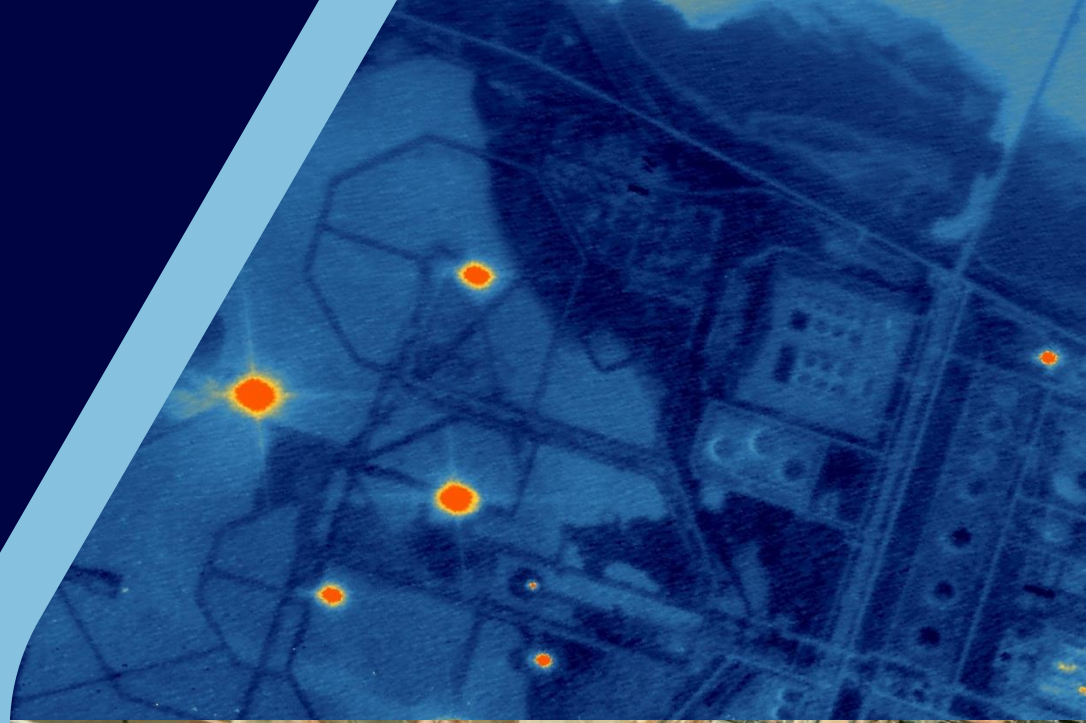
SatVu





CEOS ARD Surface Brightness Temperature Self Assessment

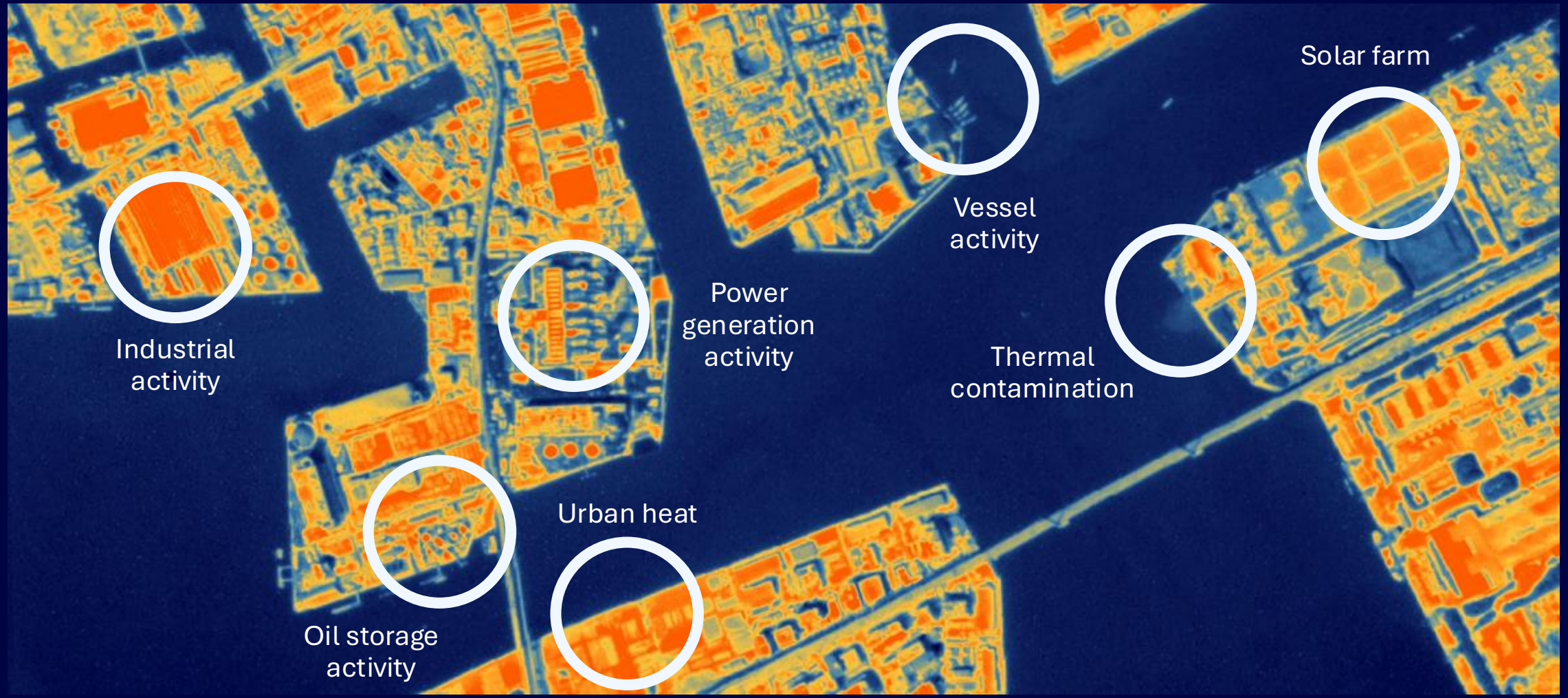
SatVu

15th September 2026

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High-resolution thermal data from space

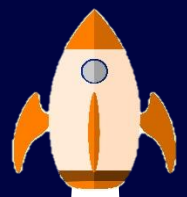
Yokohama, Japan – 24 October 2023



20231024T041338000_visual_30_hotsat1

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Our constellation



2027+
Funding to scale constellation to 9 satellites
10-20 revisits per day

Late 2026
HotSat-3 launched
2+ revisits per day

Early 2026
HotSat-2 launched

2024/2025
HotSat-2 and HotSat-3 in build
Product and feature development

2023
HotSat-1 launched, no longer operational

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Self-Assessment Progress

Status today

ID	Name	Status
1.1	CEOS-ARD PFS version	
1.2	Metrological traceability	
1.3	Machine readability	
1.4	Data collection time	
1.5	Geographical area	
1.6	CRS	
1.7	Map projection	
1.8	Geometric correction methods	
1.9	Geometric uncertainty	
1.10	Instrument	

ID	Name	Status
1.11	Spectral bands	
1.12	Sensor calibration	
1.13	Measurand uncertainty	
1.14	Measurand encoding	
1.15	Algorithms	
1.16	Auxiliary data	
1.17	Provenance	
1.18	Data access	
1.19	Valid pixels	

7/31



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Self-Assessment Progress

Status today

ID	Name	Status
2.1	No data	
2.2	Incomplete testing	
2.3	Saturation	
2.4	Cloud	
2.5	Cloud shadow	
2.6	Surface	
2.7	Solar and viewing geometry	
2.8	Terrain occlusion	

ID	Name	Status
3.1	Measurand	
3.2	Atmospheric correction	
3.3	Measurand uncertainty	

ID	Name	Status
4.1	Geometric correction	

2.1 No data
2.3 Saturation
2.4 Cloud
3.1 Measurand

11/31



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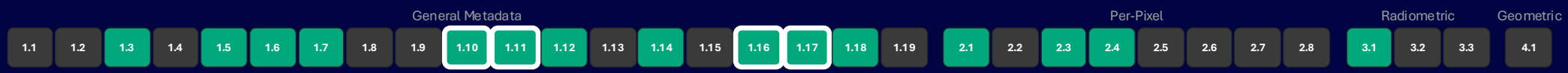
Upcoming Product Release

band_description structure

Name	Example	Comment
unit	nm	geophysical unit of bandwidth and wavelength
central_wavelength	400.0	spectral band central wavelength
bandwidth	15.0	spectral bandwidth (FWHM)
wavelength_min	382	minimum wavelength of band
wavelength_max	416	maximum wavelength of band
spectral_response_interval	2	spectral response function sampling interval
spectral_response_values	[0.67, 0.98, ..., 0.43]	sampling values of the spectral response function

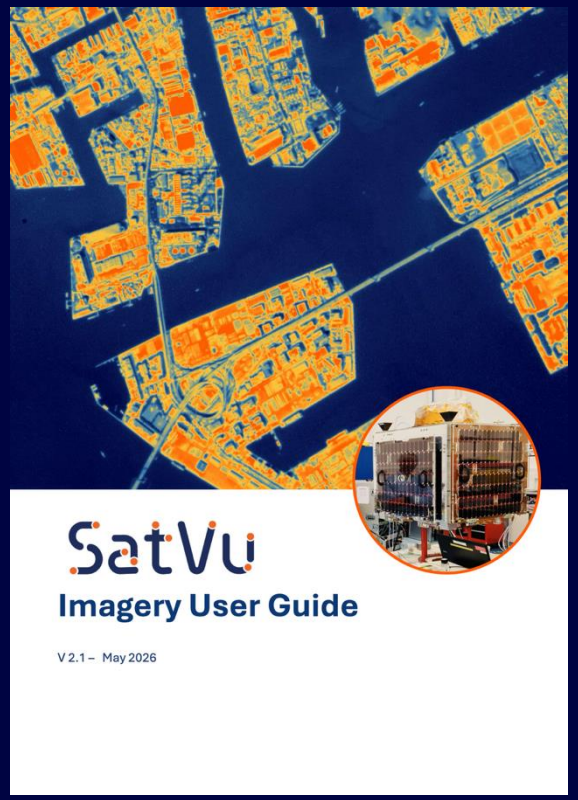
1.10 Instrument
1.11 Spectral bands
1.16 Auxiliary data
1.17 Provenance

15/31



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Upcoming Documentation



Imagery User Guide



Document Reference GSV-CCM-001
Version: 1.0
Date: 15 July 2026

Scientific Guide

Prepared by:
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Ross Hawton
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James O'Connor
Teresa Steinke
Martin Wooster

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SatVu
15 July 2026

Contents

1 Glossary 2
2 Table of contents 4
3 Introduction 5
3.1 Document overview and objectives 5
3.2 HotSat satellite 5
3.3 Payload 6
3.4 Onboard radiometric calibrator and spectral filters 6
3.5 Earth viewing acquisitions and acquisition settings 7
4 Product generation 8
4.1 Product overview 8
4.2 Primary product 10
4.3 Surface brightness temperature product 10
5 Background: Radiometric processing 11
5.1 Radiometric calibration 11
5.2 Atmospheric correction 12
5.3 Surface emitted radiance and emissivity 13
5.4 Radiance-to-temperature conversion 14
5.5 Units summary 15
5.6 Assumptions, limitations and uncertainty 15
5.7 Validation approaches 16
6 References 17

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1.8 Geometric correction methods
1.15 Algorithms
2.2 Incomplete testing
2.7 Solar and viewing geometry
3.2 Atmospheric correction

20/31

General Metadata | Per-Pixel | Radiometric | Geometric

1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	1.11	1.12	1.13	1.14	1.15	1.16	1.17	1.18	1.19	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	3.1	3.2	3.3	4.1

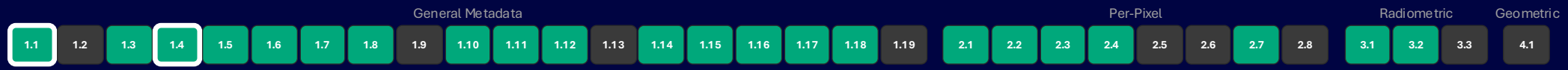
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Additional Product Updates

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"properties": {
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    "datetime": "2026-06-05T23:50:03Z",
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    "gsd": 3.597217082977295,
    "platform": "hotsat-2",
    "processing:software": {
        "image-processing": "1.567.3"
    },
```

1.1 CEOS-ARD PFS version
1.4 Data collection time

22/31



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Surface Classification



ESA WorldCover 10 m

2.6 Surface

23/31

General Metadata | Per-Pixel | Radiometric | Geometric

1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.10	1.11	1.12	1.13	1.14	1.15	1.16	1.17	1.18	1.19	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	3.1	3.2	3.3	4.1

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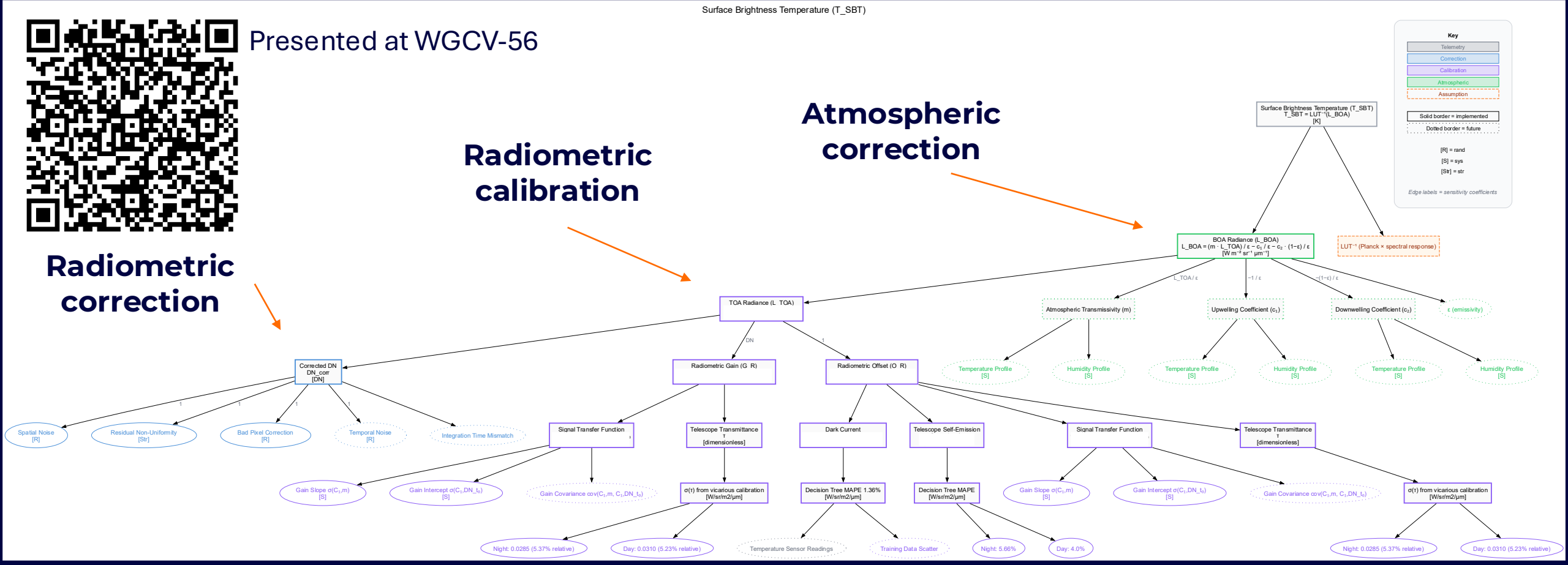
Uncertainty

Presented at WGCV-56

Radiometric correction

Radiometric calibration

Atmospheric correction



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Valid Pixels

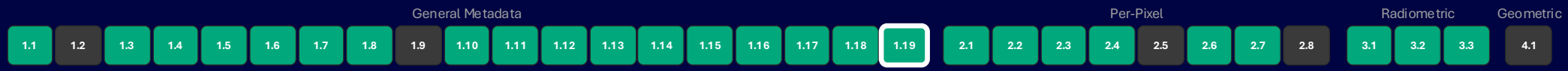
Proposed CEOS-ARD diverges from STAC definition

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    }
]
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1.19 Valid pixels

STAC v1.1

26/31



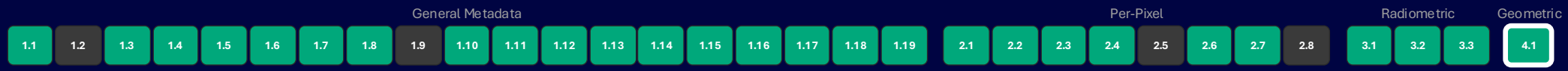
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Geometric Correction

- Current sub-pixel requirement is not achievable
- Proposal in day one of LSI-VC-20 could achieve threshold with product updates
  - Co-registration
  - Geolocation
  - Orthorectification
  - Gridding

4.1 Geometric correction

27/31



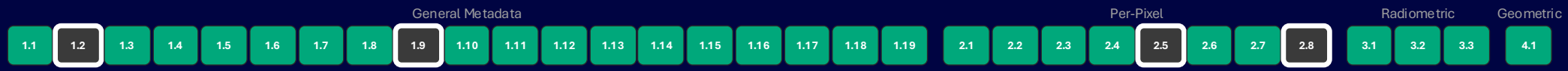
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Summary

- Remaining items are not required for threshold
  - Traceability could be demonstrated on future payloads through dedicated pre-launch calibration
  - Geometric uncertainty would be addressed during the refined requirements update
  - Cloud shadow and terrain occlusion are both challenging and would require further development

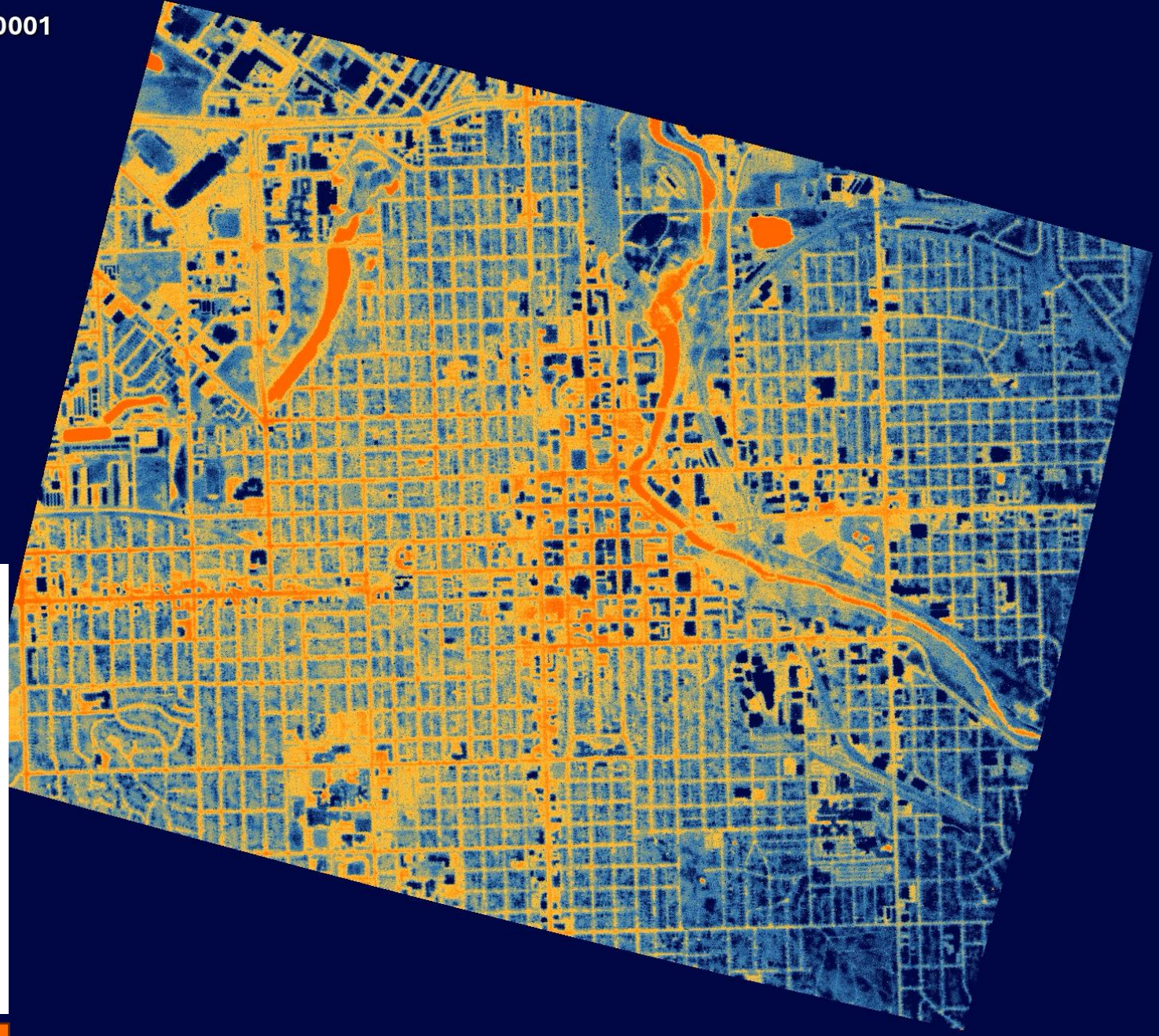
1.2 Metrological traceability
1.9 Geometric uncertainty
2.5 Cloud shadow
2.8 Terrain occlusion

27/31



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Frame: 0001



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