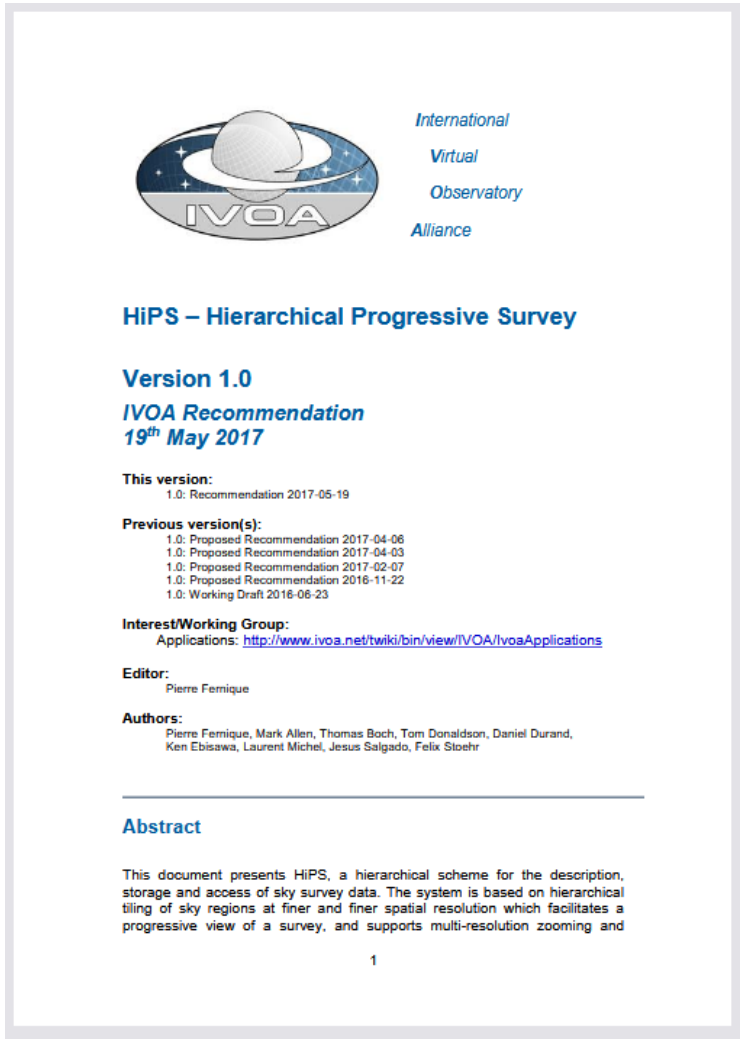
HiPS 2.0 progress report

Pierre Fernique
Centre de Données astronomiques de Strasbourg

Perth Interop - November 2026

The HiPS documents



International Virtual Observatory Alliance

HiPS – Hierarchical Progressive Survey

Version 1.0

IVOA Recommendation
19th May 2017

This version:
1.0: Recommendation 2017-05-19

Previous version(s):
1.0: Proposed Recommendation 2017-04-06
1.0: Proposed Recommendation 2017-04-03
1.0: Proposed Recommendation 2017-02-07
1.0: Proposed Recommendation 2016-11-22
1.0: Working Draft 2016-06-23

Interest/Working Group:
Applications: http://www.ivoa.net/twiki/bin/view/IVOA/IvoaApplications

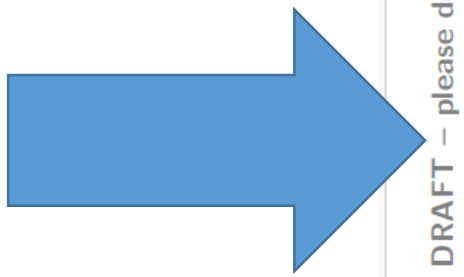
Editor:
Pierre Fernique

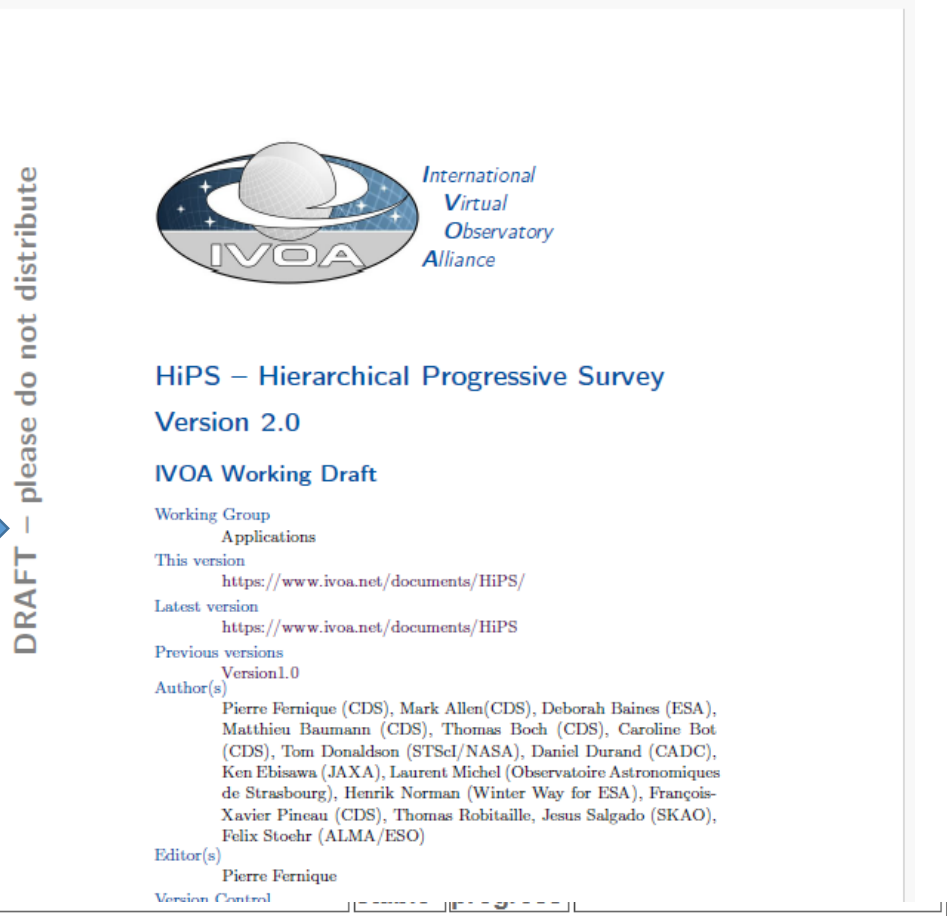
Authors:
Pierre Fernique, Mark Allen, Thomas Boch, Tom Donaldson, Daniel Durand, Ken Ebisawa, Laurent Michel, Jesus Salgado, Felix Stoehr

Abstract

This document presents HiPS, a hierarchical scheme for the description, storage and access of sky survey data. The system is based on hierarchical tiling of sky regions at finer and finer spatial resolution which facilitates a progressive view of a survey, and supports multi-resolution zooming and

1





DRAFT – please do not distribute

International Virtual Observatory Alliance

HiPS – Hierarchical Progressive Survey

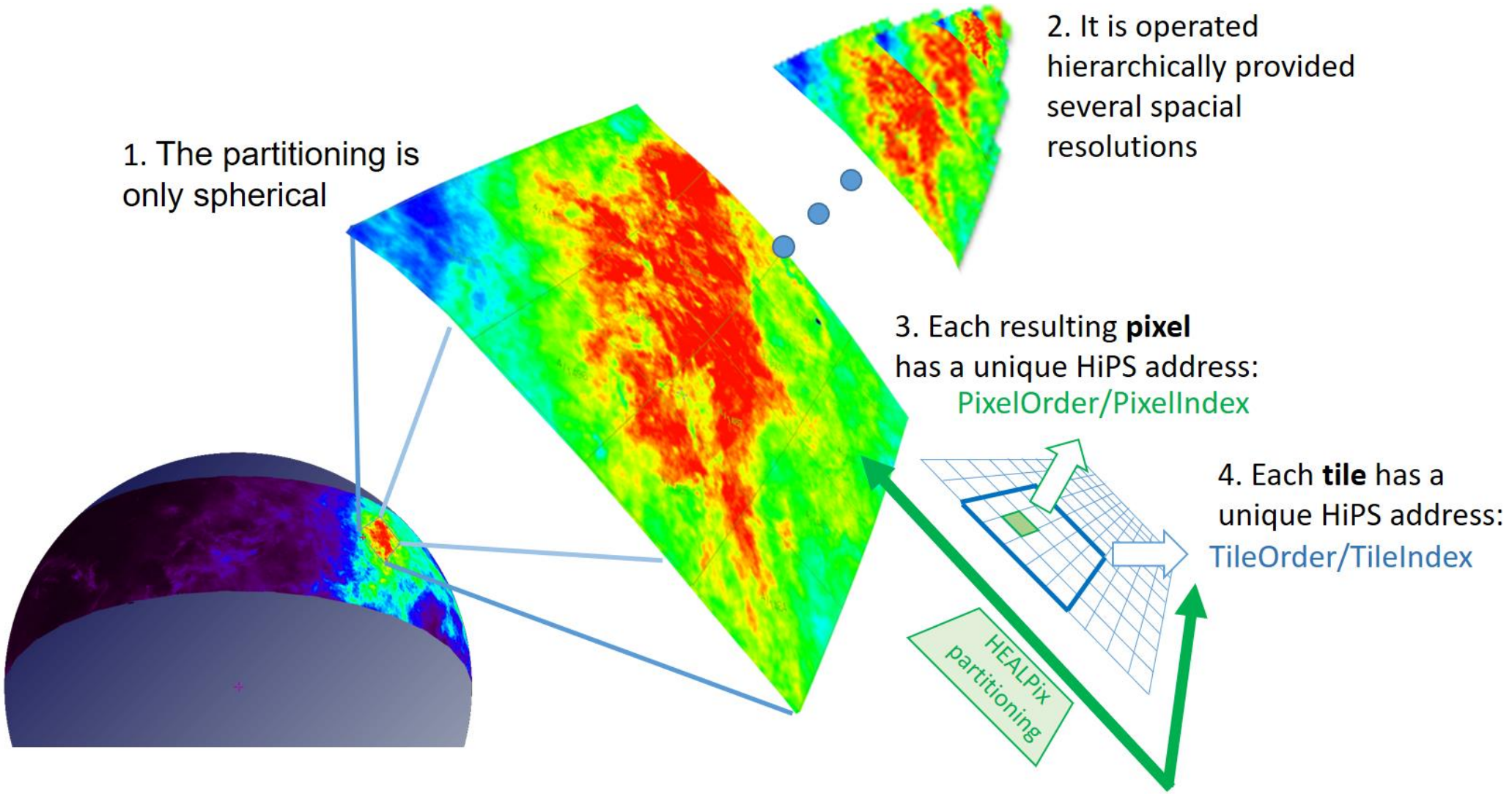
Version 2.0

IVOA Working Draft

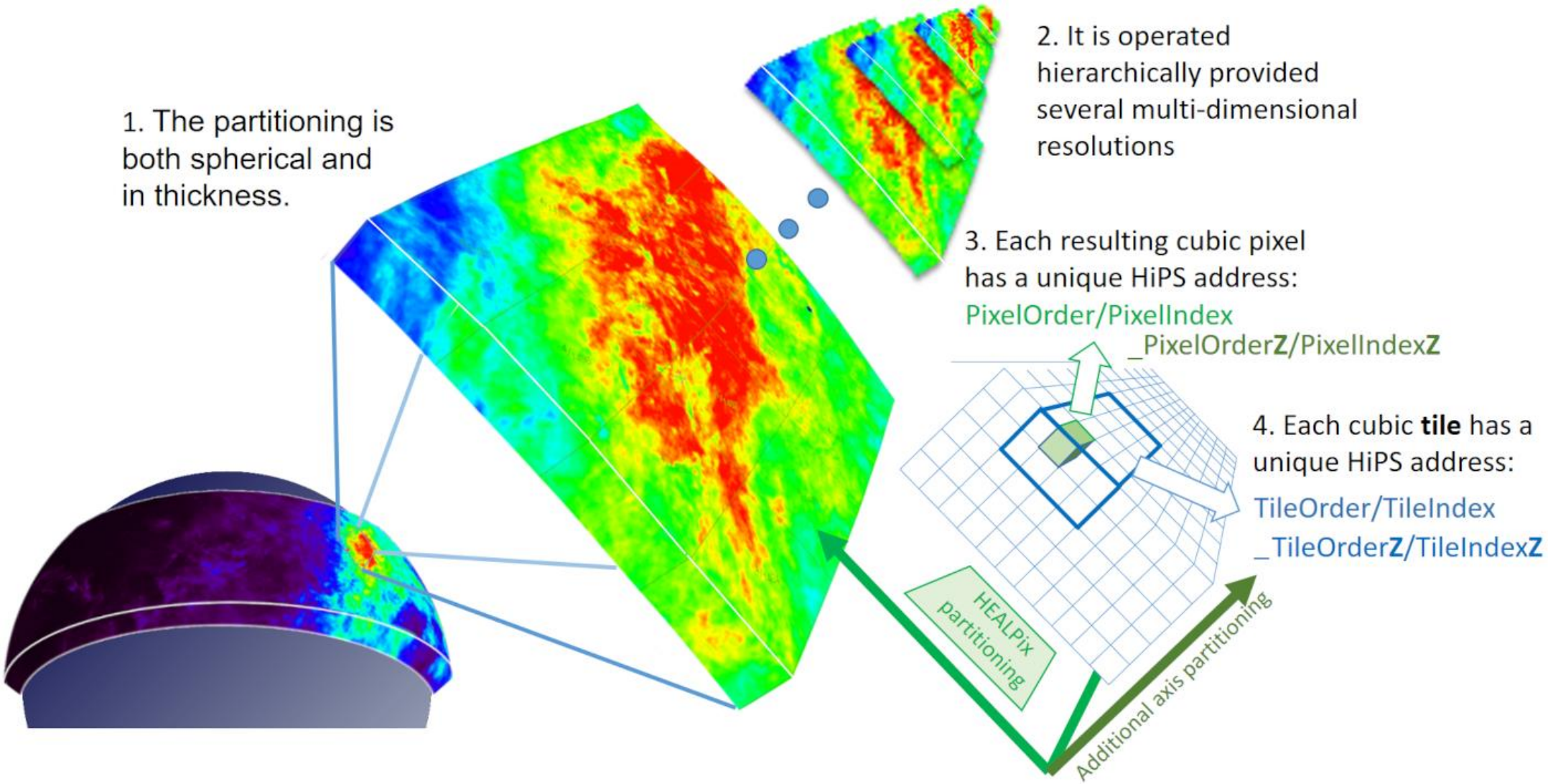
Working Group
Applications
This version
https://www.ivoa.net/documents/HiPS/
Latest version
https://www.ivoa.net/documents/HiPS
Previous versions
Version1.0
Author(s)
Pierre Fernique (CDS), Mark Allen(CDS), Deborah Baines (ESA), Matthieu Baumann (CDS), Thomas Boch (CDS), Caroline Bot (CDS), Tom Donaldson (STScI/NASA), Daniel Durand (CADC), Ken Ebisawa (JAXA), Laurent Michel (Observatoire Astronomiques de Strasbourg), Henrik Norman (Winter Way for ESA), François-Xavier Pineau (CDS), Thomas Robitaille, Jesus Salgado (SKAO), Felix Stoehr (ALMA/ESO)
Editor(s)
Pierre Fernique
Version Control

App	SAMP - Simple Application Messaging Protocol	1.3		1.3 1.3 1.3 1.3 1.3 1.2 1.2 1.2 1.11 1.11 1.10 1.00
	VOTable - VOTable Format Definition	1.5	1.6	1.6 1.5 1.5 1.5 1.5 1.5 1.5 1.4 1.4 1.4 1.4 1.4 1.4 1.3 1.3 1.3 1.2 1.2 1.2 1.20 1.20 1.10 1.00
	MOC - HEALPix Multi-Order Coverage Map	2.0		2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.1 1.1 1.1 1.1 1.1 1.0 1.0 1.0 1.0 1.0
	HiPS - Hierarchical Progressive Survey	1.0	2.0	2.0 1.0 1.0 1.0 1.0 1.0 1.0

Goal: extend HiPS document…



Goal: …to add 3D support



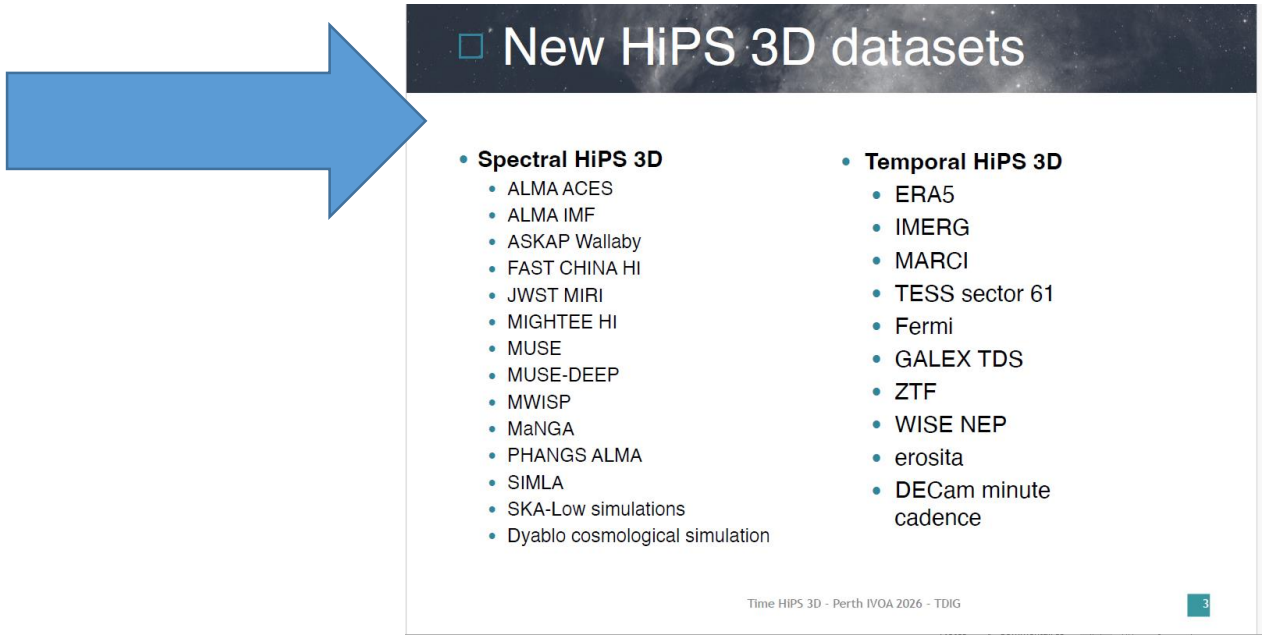
Calendar

- 2021 – First **idea** about HiPS 3D extension – CDS involvement in SKA
- 2023 – First **prototype** based on Aladin/Hipsgen for HiPS3D space-frequency
- 2024 – First IVOA **demonstration** (Malta)
- 2024 – One full Apps session on HiPS/HiPS3D (Goërlitz) : several independant implementations (Hipsgen, Reproject)

  $\Rightarrow$ Apps' agreement to add the 3D extension in HiPS document
- 2025 – First **Working Draft** for HiPS 2.0

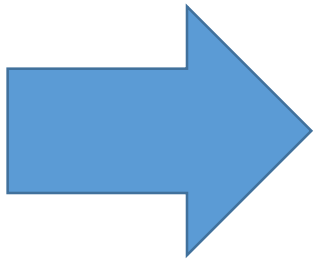
What we have…

- 2 - 3 independent implementations
  - **AladinDesktop/Hipsgen** : Visualisation and Generation (last version fully HiPS 2.0 compatible) - java
  - **Aladin Lite** : Visualisation (last version fully HiPS 2.0 compatible) – java script/rust
  - **Reproject** : Visualisation and Generation (support frequential extension (not yet time) - python
- A **collection of HiPS 3D** products
- A **HiPS2.0 WD draft** ready for the next standardisation step (PR)



What we still have to do…

- Fixe the last typos and minor corrections/additions required, before moving to Proposed Recommendation step
- Move to the next step : **Proposed Recommendation**
- Improve/write **HiPS validator for HiPS 2.0**



https://github.com/ivoa-std/HiPS/