

ESASky

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Issue/Revision: 1.0

Reference: ESA Sky

Status: Issued

ESA UNCLASSIFIED - Releasable to the Public

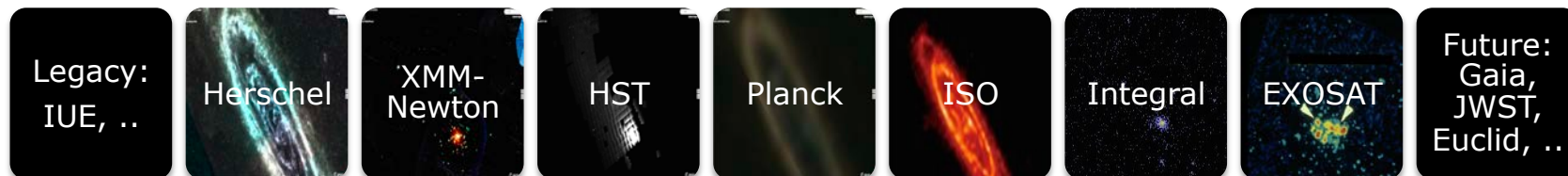
- [illegible]

ESASky concept



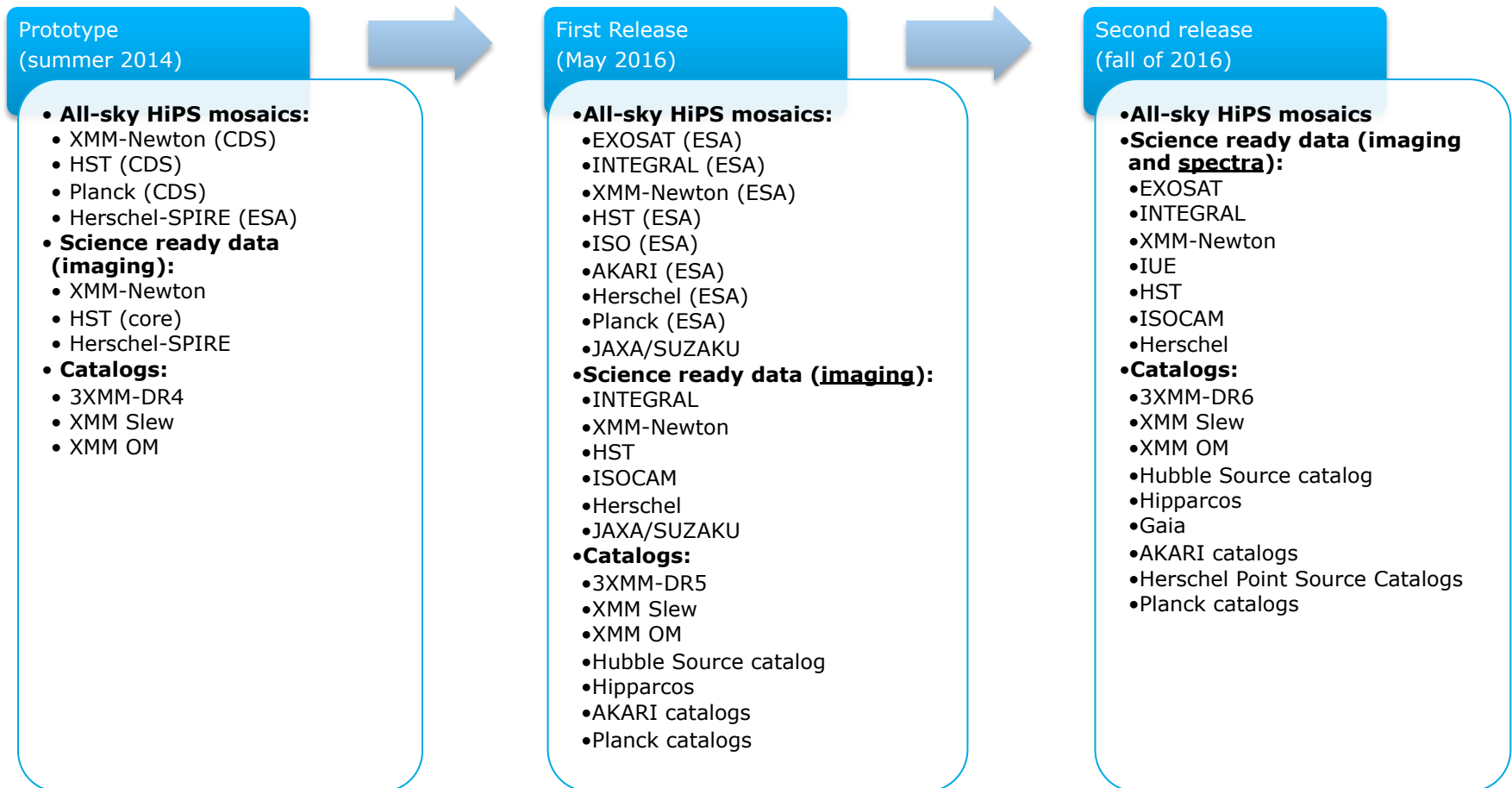
- **Goal:** to facilitate data discovery and archival science for ALL users
 - Multi-wavelength
 - Project agnostic
 - Exploration
- Interface to all astronomy archives

ESASky



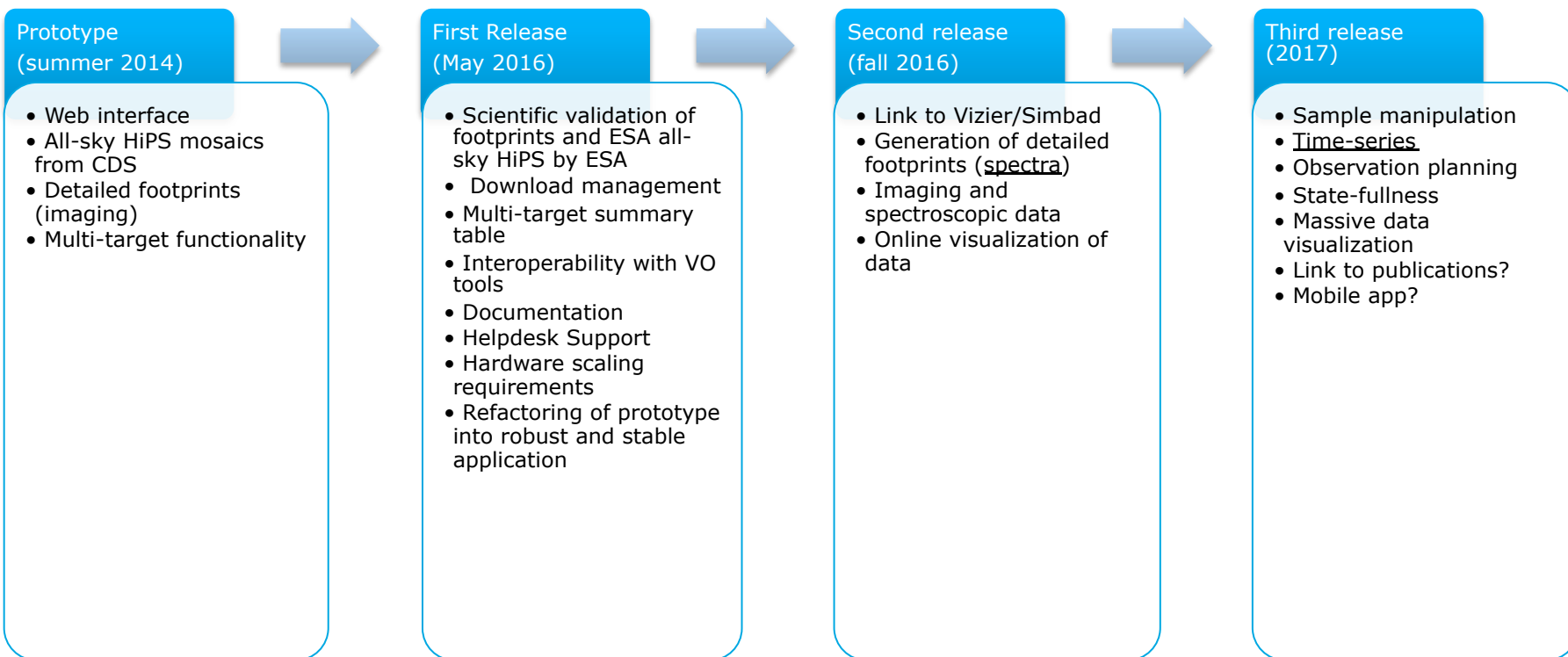
- First release this week at the IVOA interop in Stellenbosch!!

ESASky data contents roadmap



Aim: continuous integration, testing and releasing

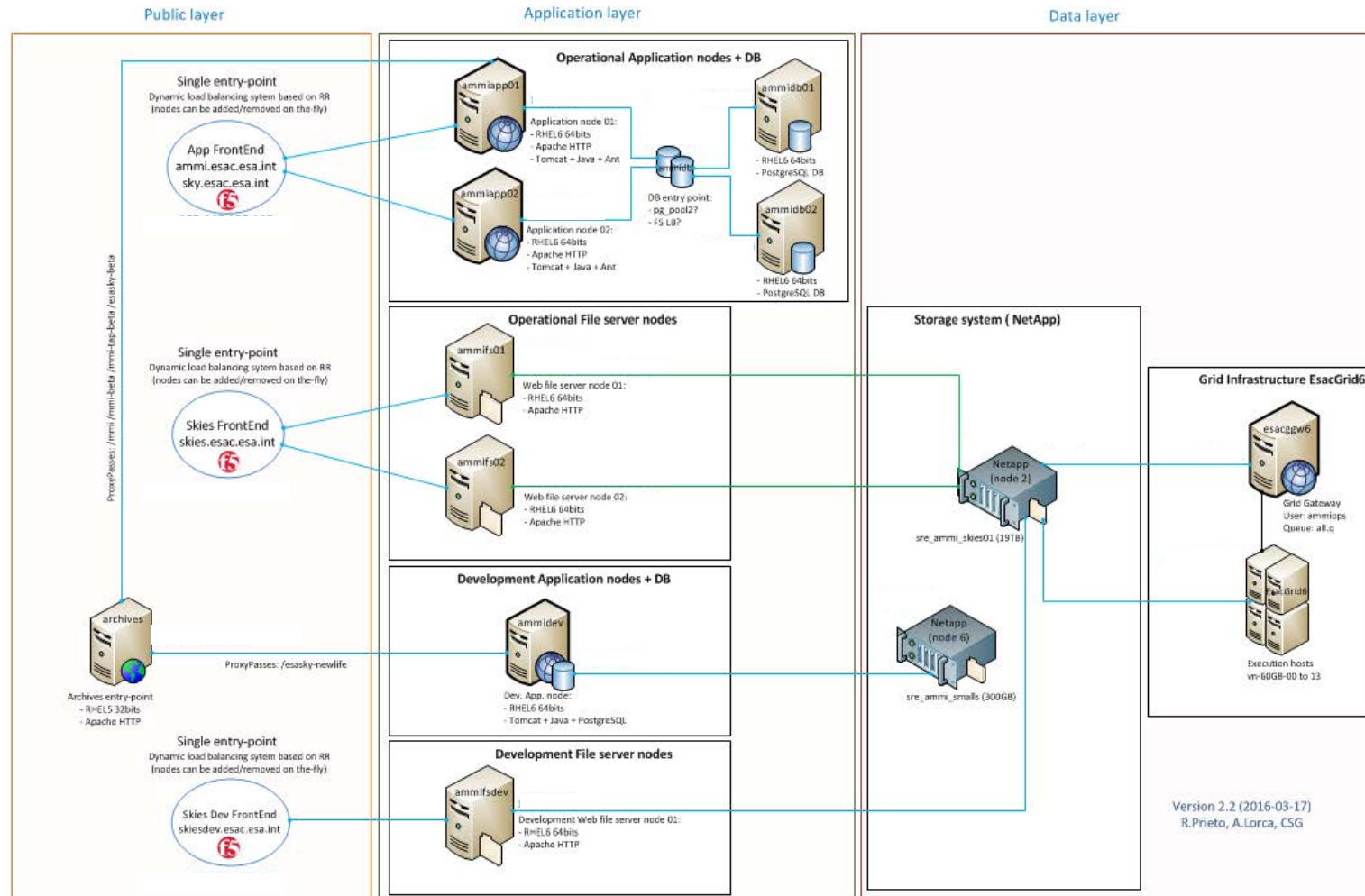
ESASky feature roadmap



Aim: continuous integration, testing and releasing

ESASky Operational Architecture

Astro-MMI : scalable system architecture



ESASky release & announcements plan

- Release plan for first release :
 - 9 May : First release to XMM-Newton community with Science conference @ ESAC & at IVOA interop meeting in Cape Town, South Africa
 - Mass mailings to missions
 - 6 June (TBC): Planck registered users
 - 13 June (TBC): XMM-Newton registered users
 - 20 June (TBC): Hubble registered users
 - 21 June : demo at . Astronomy 8 python conference
 - 27 June (TBC): Herschel registered users
 - 2 -8 July 2016 : Demo booth at EWASS 2016 in Athens
 - 11 July (TBC): INTEGRAL registered users
 - July (TBC): All LDAP science users (~ 20K)
 - 26 – 28 September : Demo at JWST conference @ ESAC
 - End July TBC: announcement with SCI Comms team

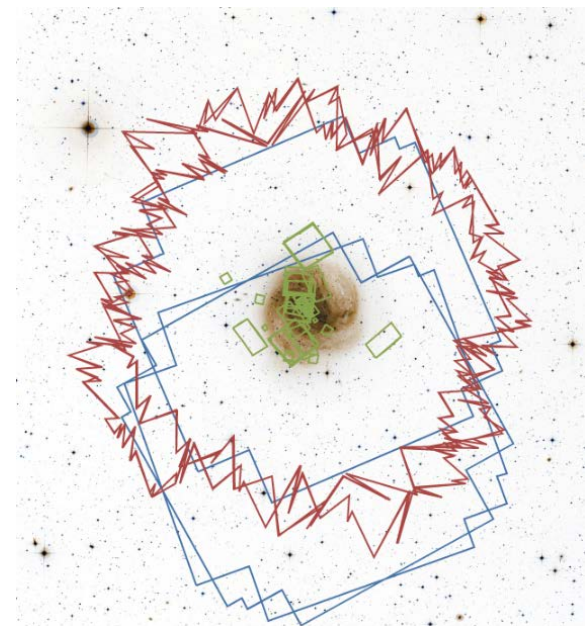
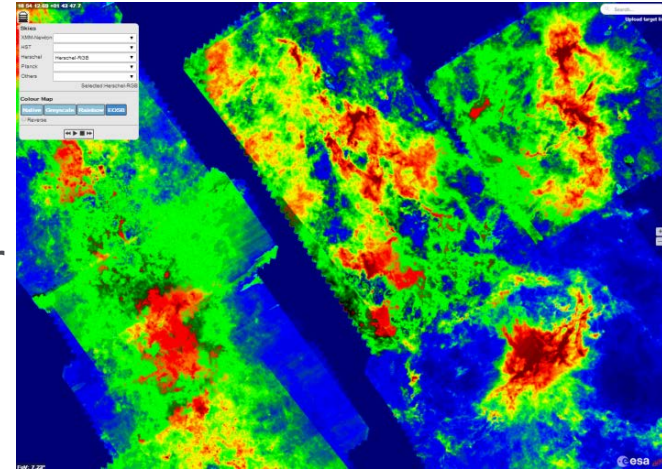
Demo

<https://youtu.be/eAfHq7s5MBQ>

ESASky v1.0 - Backend Data Generation



- HiPS: Hierarchical Progressive Survey
 - HEALPix sky tessellation
 - Number of levels depend on pixel angular resolution
 - Planck (low) 3 levels
 - Herschel (medium) 7 levels
 - HST (high) 14 levels
- Footprints
 - HST: Provided by project
 - Herschel: Footprint Finder (ST-ECF)
 - XMM: Instrumental + pointing



ESASky v1.0- Backend Data Access



- Apache HTTP Server
 - Serves HiPS requests
- Java Servlet container
 - Serves TAP & Target Resolver requests
- Database
 - PostgreSQL DB
 - Spherical data types library (PgSphere)
 - Footprints -> Spherical data types
- Usage of IVOA Protocols & Standards
 - TAP requests
 - ADQL translation to SQL + PgSphere
 - Storage of STC-S footprint information



ESASky v1.0 - Frontend



- Running on a Web Browser (HTML5/CSS3)
- Google Web Toolkit
 - Aladin Lite wrapper (JSNI)
 - Data Visualization (Highcharts)
- Usage of IVOA Protocols
 - TAP accessing archive metadata
 - ADQL describing complex FoVs
- Astronomical services access
 - Target coordinates resolver
 - Angular size resolver



Highcharts JS



- Fabrizio Giordano (key person, full-time)
- María Henar Sarmiento (part-time, GUI)
- Elena Racero (part-time, HiPS and footprints)
- Belén López Martí (full-time EXPRO, HiPS development)
- Pilar de Teodoro (part-time, DB)
- Sara Nieto (part-time, DB ingestion)
- Raúl Gutiérrez (part-time, backend)
- Juan González (part-time, DB optimization)

Try the ESASky yourself !





<http://sky.esa.int>

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<http://www.cosmos.esa.int/web/esdc/esasky-help>

