VESPA:
Virtual European Solar & Planetary Access

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VESPA portal	http://vespa.obspm.fr
web site (outreach)	http://www.europlanet-vespa.eu
wiki (org.)	https://voparis-wiki.obspm.fr/
github (tuto, codes…)	https://github.com/epn-vespa
publication list	https://voparis-wiki.obspm.fr/display/VES/Publications

VESPA Europlanet-2024 / Participants

EUROPLANET 2024 Research Infrastructure
2020-24

VESPA includes 19 contributing participants (labs) in 14 institutes:

Observatoire de Paris (IMCCE, LESIA, PADC)

CBK-PAN Warsaw

Jacobs Univ. Bremen

CNRS (CDS IPSL IPAG IRAP)

IWF Graz

IASB-BIRA Brussels

SpaceFrog Toulouse

OATS/INAF Trieste

DLR Berlin

+ Contributions from the community

UPV/EHU Bilbao

Univ. Bristol

UCL London

SINP-MSU Moscow

Univ. Heidelberg

VESPA

- Open access data services:
  57 currently open in all fields of planetary science / heliophysics / exoplanets
  New: VizieR catalogues from CDS, PlanMap + upgrades/updates of existing services

- Data handling tools from the Virtual Observatory
  New version of DaCHS server released, full support of EPN-TAP
  OPUS code-on-line platform + assessment by ESA / JUICE (Callisto flyby)

- Global query system adapted from the Virtual Observatory
  New: EPN-TAP doc in final review (Proposed Recommendation at IVOA)

- Dissemination
  - Engage with international consortia and agencies (IPDA, RDA, DACE, IHDEA, CNES…)
  - New: Europlanet Soc now a member of IPDA steering committee + VESPA in DACE
  - EPSC 2021 demonstrates that EPNCore is adopted by the community (MITM4 session)
  - Engage with EOSC consortium / activities
  - Involved in an action with the OGC consortium (led by CNES and USGS)

Europlanet VESPA: Data services connected via EPN-TAP / field

Open
Open in test | upgrade required
Drafted
Scheduled 2024 (selection)
• New or upgraded in 2020/21
• New content in 2020/21

Atmospheres

- **Titan profiles - CIRS (Cassini, LESIA)**
- ***Venus spectroscopy - VIRTIS (VEx, LESIA)***
- **Mars Climate Database** (modeling, **LMD**)
- **Venus profiles - SPICAV/SOIR (VEx, IASB-BIRA)**
- **Mars profiles - SPICAM (MEx, LATMOS)**
- *All MEx derived atmospheric products*
- *Venus cloud products (LATMOS)*
- *ExoMars/NOMAD (BIRA-IASB)*

Small bodies

- ***M4ast*** *(ground based spectroscopy,* ***IMCCE)***
- **1P/Halley spectroscopy (IKS / Vega-1, LESIA)**
- **BaseCom (Nançay Obs, LESIA)**
- **TNOs are cool (Herchel & Spitzer** + compilation, **LESIA & LAM & Utinam)**
- **SBNAF** (from H2020 prog, **Konkoly Obs)**
- ***Cometary lines catalogue (IAPS)***
- ***Vesta & Ceres spectroscopy - VIR/DAWN (IAPS)***
- **DynAstVO**: NEO refined parameters **(IMCCE)**
- ***MPCorb****: Small bodies orbital cat* ***(Heidelberg)***
- *Rosetta ground-based support (Edinburgh)*
- **67P illumination config (IRAP)**
- **Meteor_showers** predictions **(IMCCE)**
- *Occultations predictions, ast & sat (IMCCE)*
- ***LuckyStar, occultations (****ERC prog,* ***LESIA)***
- *Natural satellites db (IMCCE)*
- **VizieR asteroid spectra** (**LESIA / CDS**)

Solid spectroscopy

- **SSHADE** ices & minerals spectro **(IPAG & network)**
- ***Planetary Spectral Library (DLR)***
- **PDS spectral library (LESIA)**
- ***Berlin Reflectance Spectral Lib (DLR)***
- ***Hoserlab (Winnipeg U)***

Surfaces

- **CRISM** WCS service **(MRO, Jacobs U)**
- **Mars craters (Jacobs U,** + update by GEOPS)
- **USGS planetary maps** WMS **(Jacobs U)**
- **PlanMap:** geol maps **(Jacobs U)**
- ***M3*** *WMS service* ***(Chandrayaan-1, Jacobs U)***
- **HRSC nadir images**, WMS **(MEx, Frei Univ)**
- **OMEGA cubes and maps (MEx, IAS)**
- **VIMS satellites**, w/geometry **(Cassini, LPG)**
- *MarsSI GIS (Lyon)*
- *Global spectral param of Mercury (DLR)*

Magnetospheres / radio

- **APIS (HST/Cassini, LESIA)**
- **NDA (Jupiter & Sun radio, LESIA/CDN)**
- **AMDA (CDPP / IRAP)**
- **MAG data (VEx, IWF Graz)**
- **MASER** & related services **(LESIA)**
- ***RadioJove*** **(LESIA & US amateur network)**
- **Iltate HF data of Jupiter (Tohoku Univ, Jap)**
- ***UTR-2*** *Juno ground support* ***(Kharkiv)***
- **MDISC & JASMIN (modeling, UCL)**
- **Cluster & Themis data (IAP, Prague)**
- **IMPEx models** (from FP7 prog, **IWF Graz)**
- ***Hisaki (Tohoku Univ., Jap)***
- **Transplanet (CDPP / IRAP)**
- **LOFAR Jupiter (CBK/PAS, Warsaw)**
- ***Magnetic field simus (LMSU)***
- ***ASPERA & MARSIS atm obs (MEx, Iowa U)***

Solar

- ***HELIO AR & 1T3 solar features*** (from FP7 prog, **LESIA)**
- **Bass2000 (LESIA)**
- ***Radio Solar db (Nançay, LESIA)***
- **CLIMSO (Pic du Midi, IRAP)**
- **IPRT/AMATERAS (Tohoku Univ, Jap)**
- **Gaia-DEM (SDO, IAS)**
- ***EIT_syn (SoHO, IAS)***
- ***e-Callisto (Windisch, Sw)***

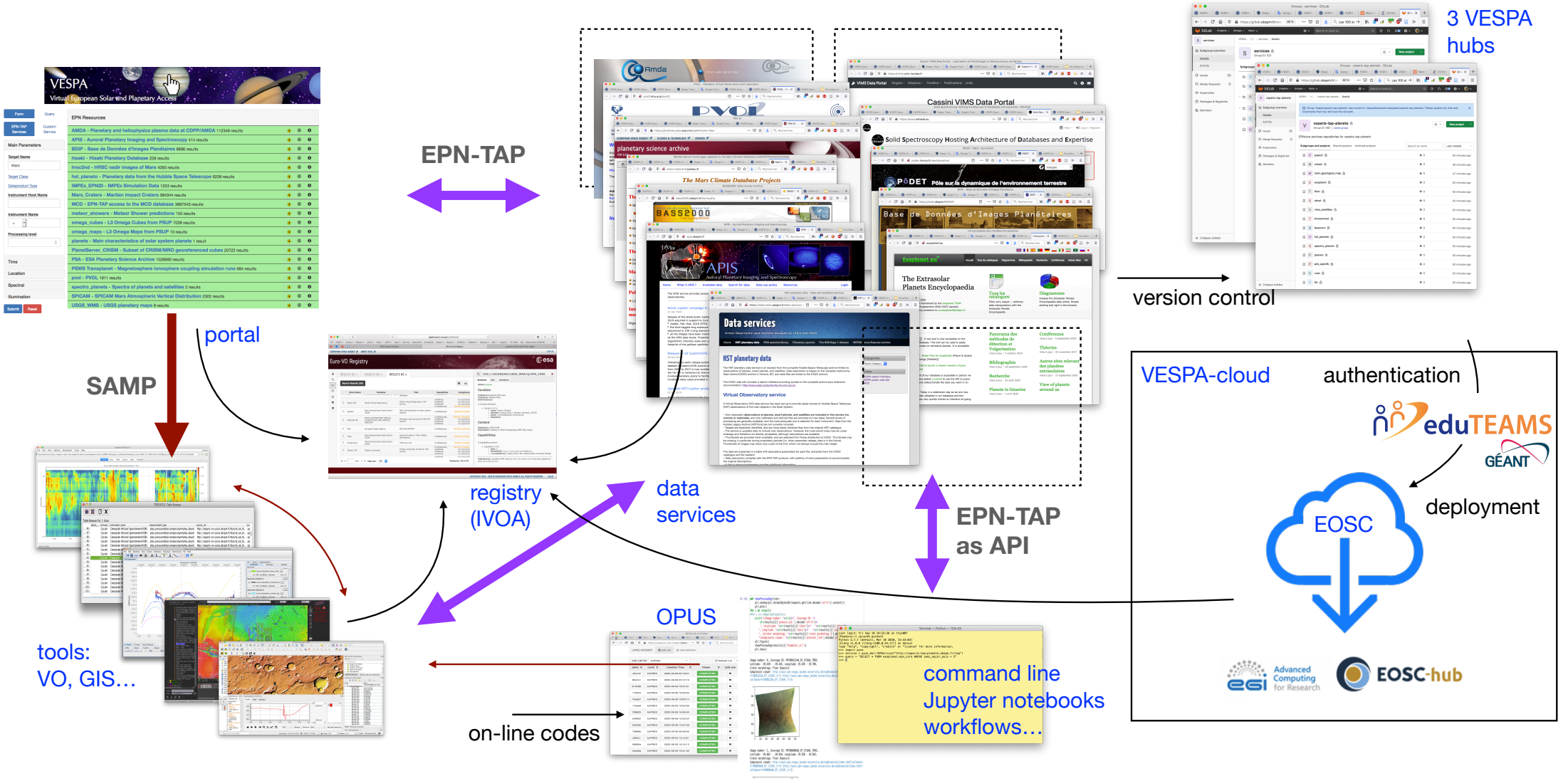
Generic / interdisciplinary

- **BDIP (LESIA)**
- **PVOL (UPV/EHU & amateur network)**
- **Telescopic planetary spectra collection (LESIA)**
- **PSA complete archive (ESA)**
- **HST planetary data (LESIA, to CADC archive)**
- *Catalogues of planetary maps (Budapest)*
- **VizieR_planets:** Planetary Science catalogues **(CDS)**
- ***Gas absorption cross-sections*** **(Granada)**
- **Planets** *then satellites characteristics* **(LESIA/IMCCE)**
- ***Nasa dust catalogue (IAPS)***
- *Stellar spectra, support for observations & exopl. (LESIA)*
- *DARTS (JAXA - currently via PDAP)*
- ***ESAsky planetary data (ESA)***
- *Interface with VAMDC (TBD)*

Exoplanets

- **Encyclopedia of exoplanets** (compilation, **LUTH/LESIA)**
- *Catalogue of exo disks (LESIA)*
- *Interface with DACE (Geneva)*
- *ARTECS climate simulations (AOTS/INAF)*
- *Atmospheric studies (UCL)*
- **Exotopo:** exoplanet surface simulations **(GEOPS)**

VESPA: infrastructure



VESPA: prospects

- Services:
  Implementation workshop scheduled on-line Nov 2021 (replacement for Toulouse and Bremen)
  New content in SSHADE (band lists, etc) and PVOL (spectra)

- Tools:
  - VESPA portal update on-going (from user inputs and UX analysis)
  - ElasticSearch (Google-like) queries in dev; will also improve response time of largest services
  - OPUS code-on-line platform (from ESCAPE H2020 pgr) -> port to EOSC

- Dissemination:
  - EPN-TAP doc in final review at IVOA
  - More collaborations: ESA/PSA and astro, NASA/PDS, national and H2020 programmes

- Internal interactions
  - Coordinate with TAs and NA2 to distribute their data (+ GMAP, SPIDER, ML)
  - Thematic collaborations within VESPA (exoplanets, atmospheres, surfaces, small bodies…)
  - New services in these fields
  - Common activity was slowed down during pandemic, in favour of smaller groups.
  Will restart hopefully next year

VESPA: prospects, 2

VESPA-cloud: assessment at the coming workshop

VESPA hubs: many services stored on VO-Paris gitlab, supported by VESPA teams

Growth crisis: need to adapt all services to DaCHS2 / EPN-TAP 2.0

- Workshops: pending issue with IWF solved (thanks to Günter and Ute!)

  => No budget change

- Deliverables and Milestones rescheduled (see minutes of VA precouncil)
- Request for a publication/contribution policy - draft sent to management