



HAL
open science

Résif-SI Grenoble : Résif-DC, Rap, Sismob

Jonathan Schaeffer, Catherine Péquegnat, David Wolyniec, Rima Bouazzouz,
Jérôme Touvier

► **To cite this version:**

Jonathan Schaeffer, Catherine Péquegnat, David Wolyniec, Rima Bouazzouz, Jérôme Touvier. Résif-SI Grenoble : Résif-DC, Rap, Sismob. Rencontres scientifiques et techniques RESIF 2019, Nov 2019, Biarritz, France. hal-02416437

HAL Id: hal-02416437

<https://hal.science/hal-02416437>

Submitted on 20 Jan 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

RESIF-SI Grenoble : RESIF-DC, RAP, SISMOB

J. Schaeffer^(1 presenting author), C. Péquegnat⁽²⁾, D. Wolyniec⁽¹⁾, R. Bouazzouz⁽²⁾, J. Touvier⁽²⁾ and RESIF-SI working group

(1) Université Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, IRD, IFSTTAR, OSUG, F-38000 Grenoble

(2) Université Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, IRD, IFSTTAR, ISTERRE, F-38000 Grenoble

Contact : dc@resif.fr / Helpdesk : resif-dc@univ-grenoble-alpes.fr

Services



RESIF-DC

(Meta)Data Integration :

- realtime data collection
- validated data submission and integration
- Metadata submission and integration

RESIF-SI datamanagement tools :

- webservices orphanfile, transaction, assembleddata

Metadata exploration seismology.resif.fr

Regional nodes RAP and SISMOB

Raw data collection

Data qualification

Metadata edition

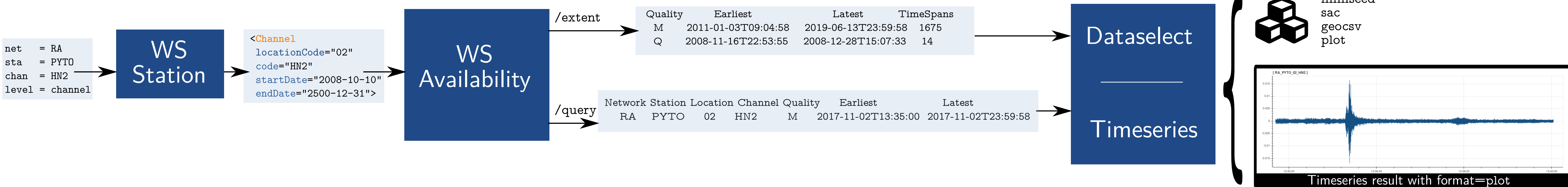
Data management expertise

cf. SISMOB poster

1. (Meta)Data distribution

- realtime data distribution
- FDSN webservices
- dataset, station, availability
- EIDA webservice : wfcatalog
- arlink (to be stopped end of 2019)
- rsync
- RESIF-SI webservices :
timeseries / timeseriesplot

New webservices : **Availability** <https://ws.resif.fr/fdsnws/availability/1> **Timeseries** <https://ws.resif.fr/resifws/timeseries/1>



Service and data catalog : routing data requests

RESIF-SI services and data catalog are published through the **routing** webservice. The data provider defines priority data centers for the distribution of network data. The routing information is used by worldwide portals, federators and ObsPy in order to route the requests to the best datacenter.

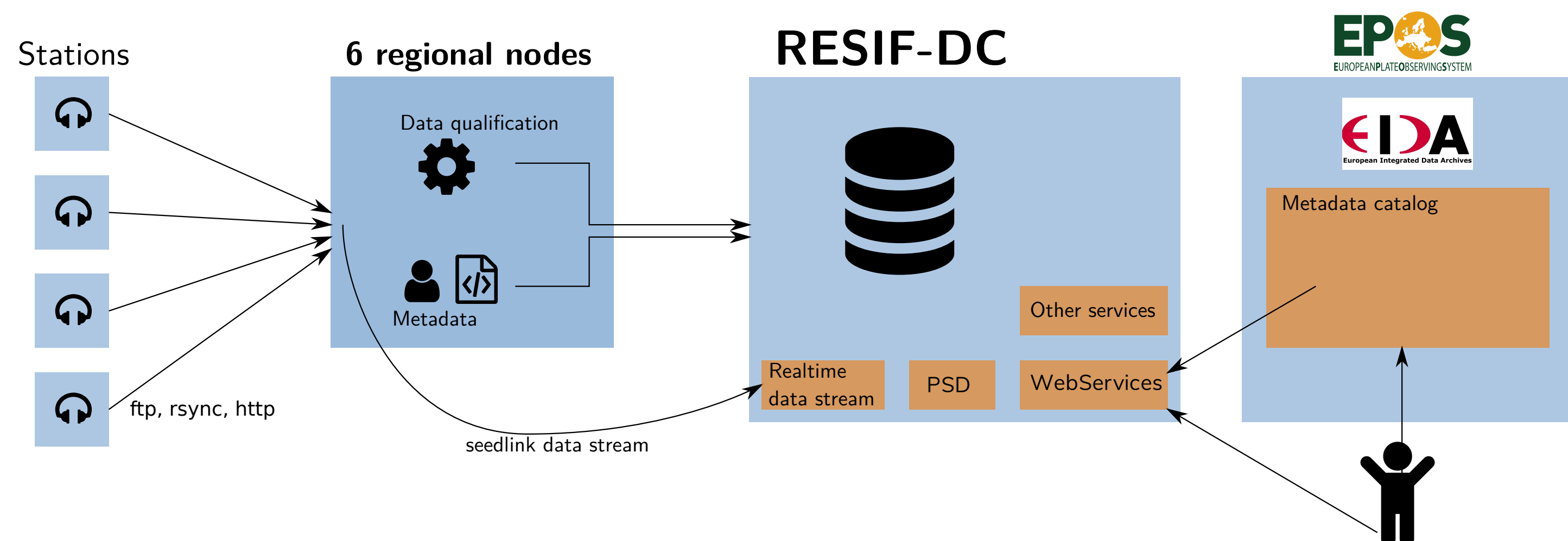
Routing exemple with ObsPy

```

>>> from obspy.clients.fdsn import RoutingClient
>>> client = RoutingClient("eida-routing")
>>> inv = client.get_stations(
... channel="LHZ", starttime=UTCDateTime(2017, 1, 1),
... endtime=UTCDateTime(2017, 1, 1, 0, 5), latitude=10,
... level="channel", longitude=10, maxradius=25)
>>> print(inv)
    
```

Inventory created at 2019-11-05T15:14:55.741949Z
Created by: ObsPy 1.1.0
<https://www.obspy.org>
Sending institution: ObsPy FDSN Routing 1.1.0, RESIF, SeisComP3 (GFZ, RESIF)
Contains:
Networks (2):
G, TT
Stations (2):
G.TAM (Tamanrasset, Algeria)
TT.TATN (Station Tataouine, Tunisia)
Channels (2):
G.TAM.00.LHZ, TT.TATN.00.LHZ

Data management workflows



Regional nodes **collect** the data, **validate** and **qualify** it. They create all **relevant metadata** and store the results at RESIF-DC

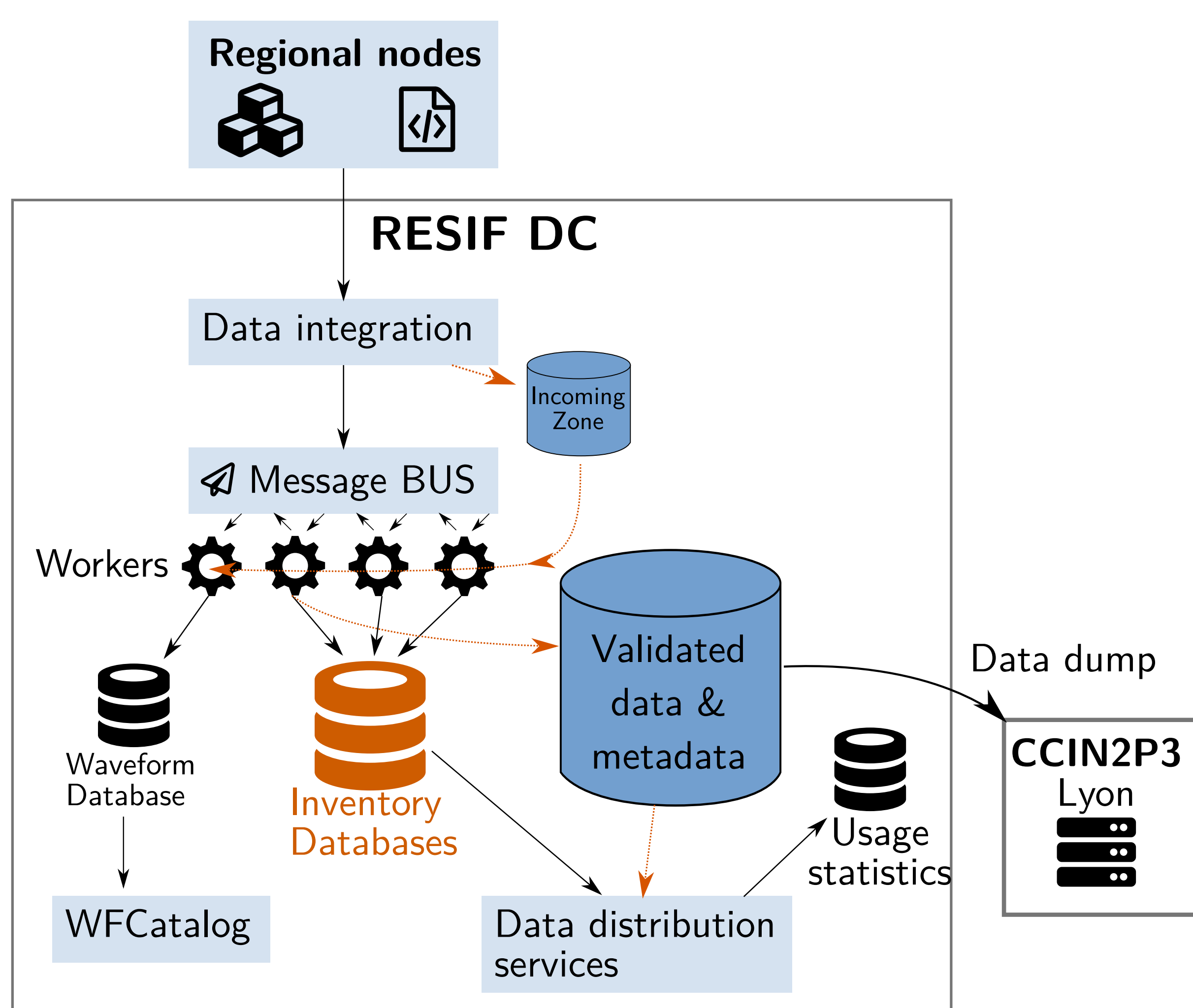
They **build the realtime data streams** that are concentrated and distributed at RESIF-DC

RESIF-DC stores, distributes and computes side products from the validated data. The metadata is made available for EPOS federator and other federated services.

All datasets are integrated in the ORFEUS-EIDA data distribution system, and in EPOS.

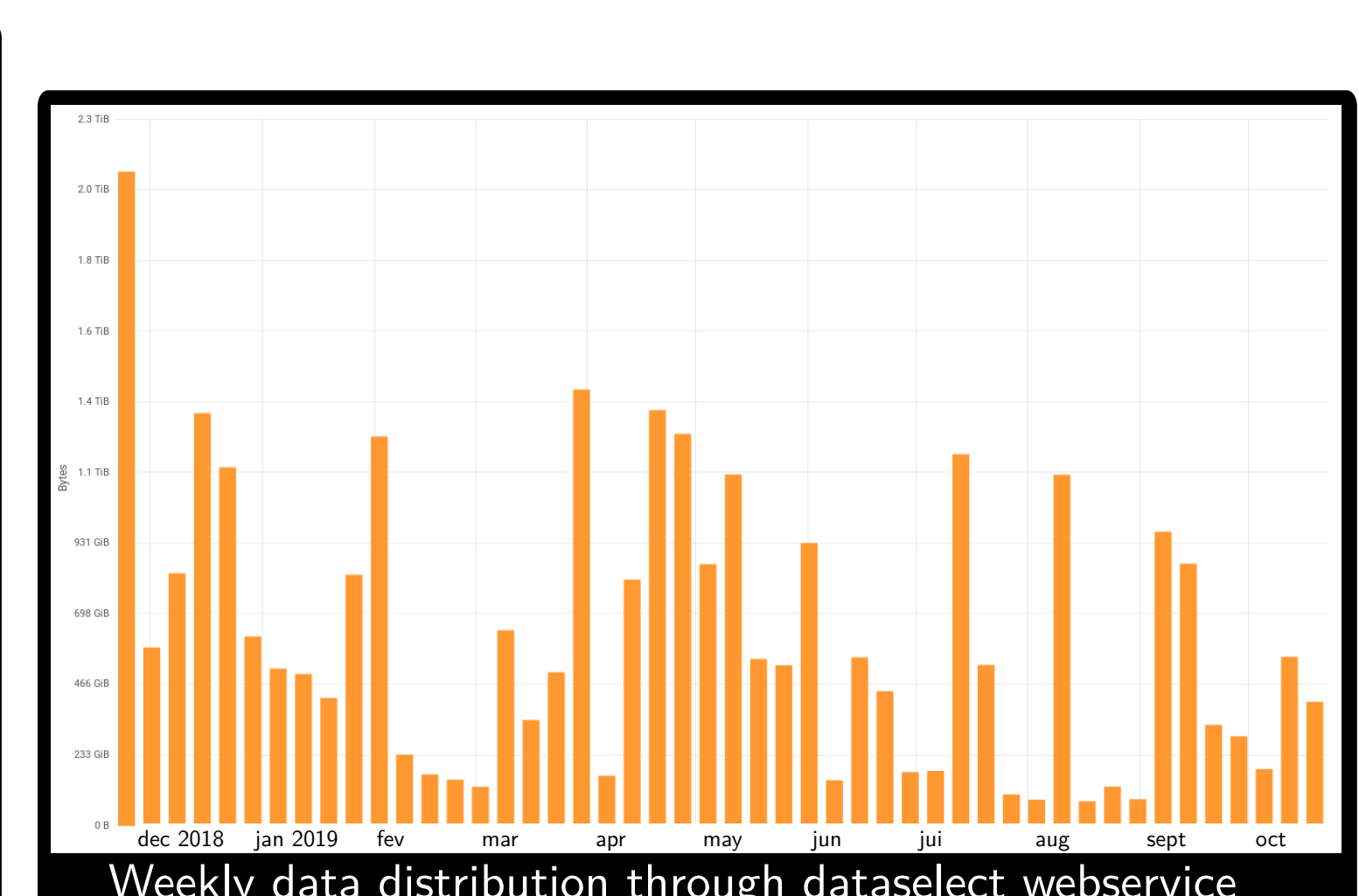
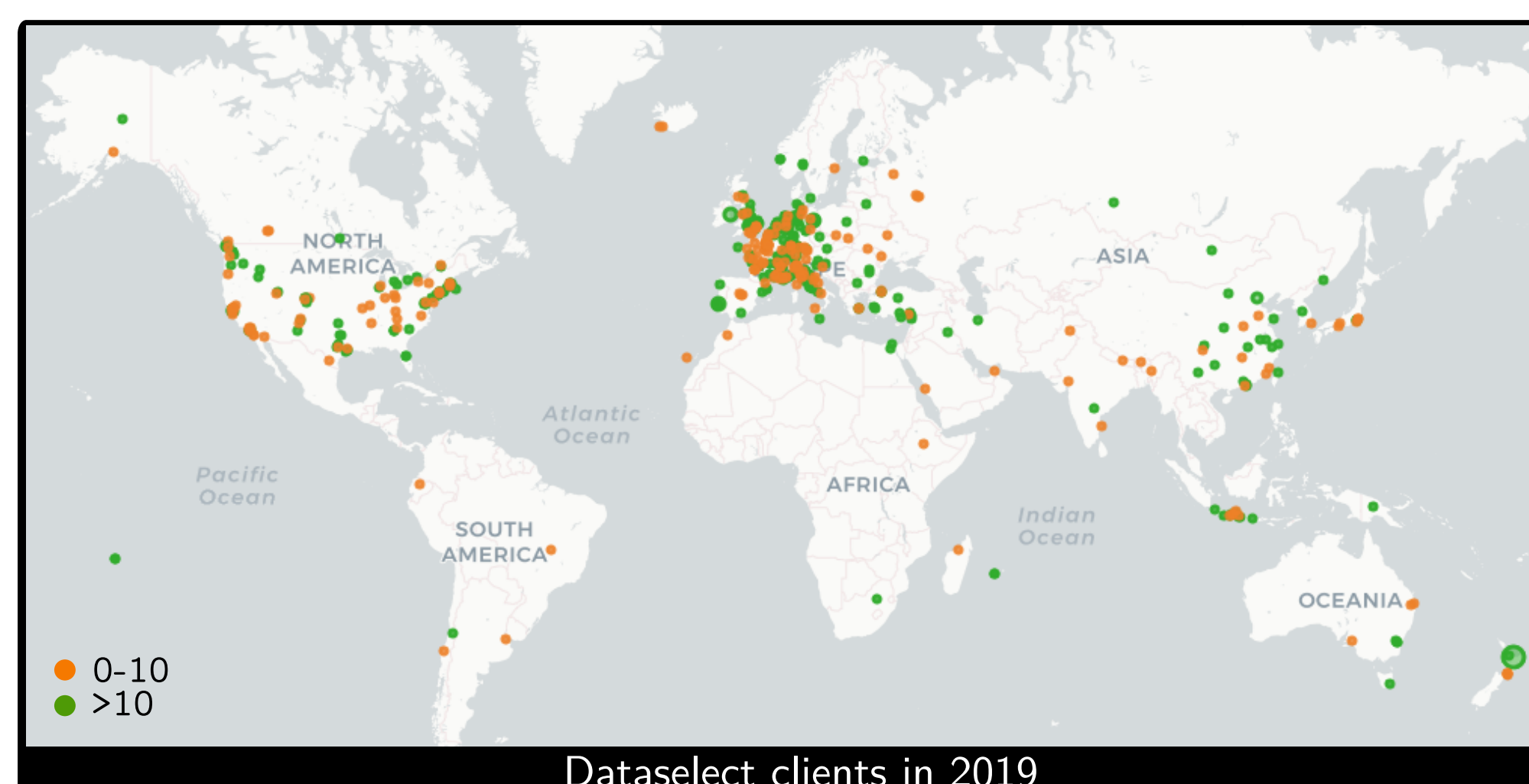
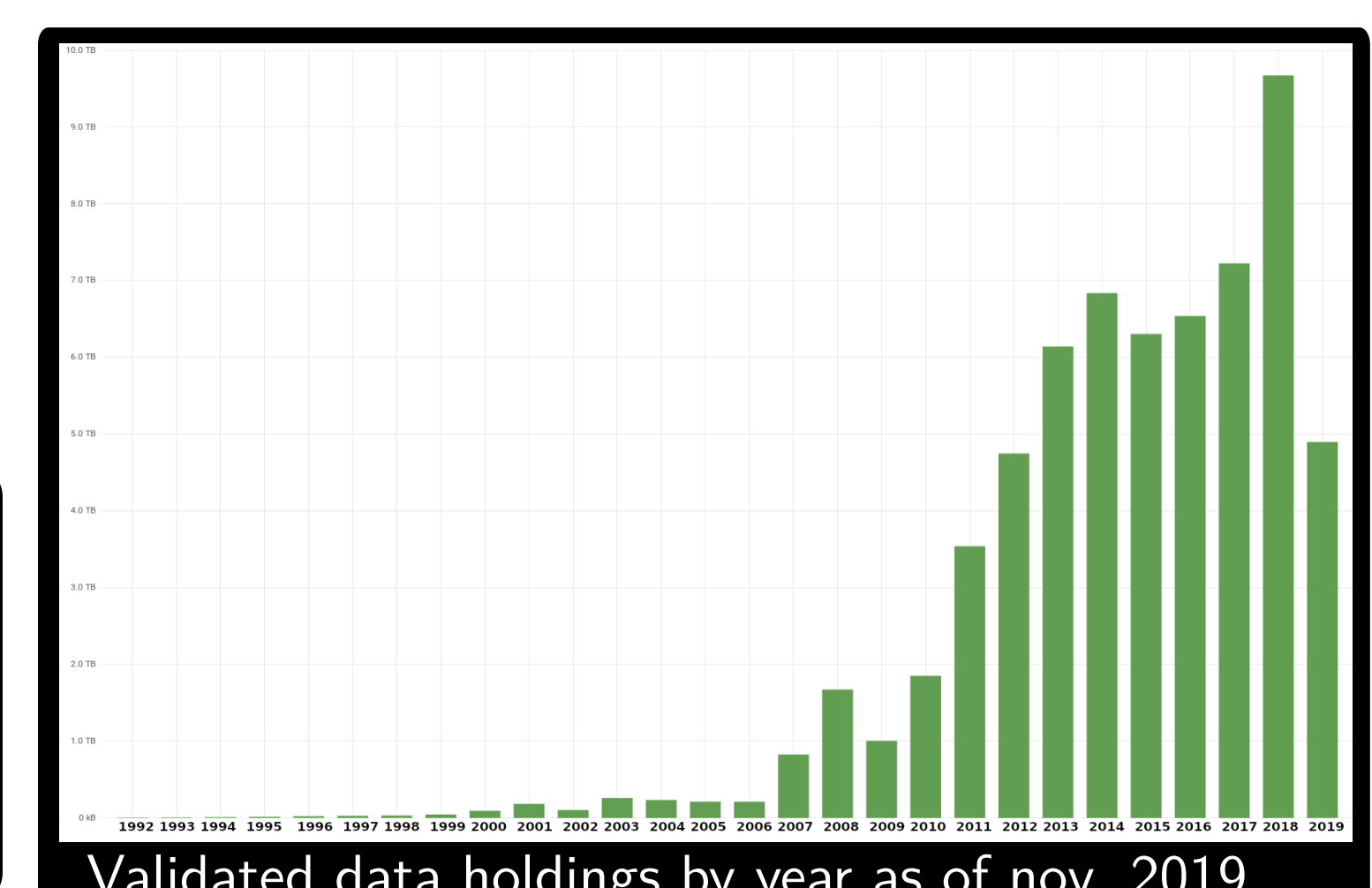
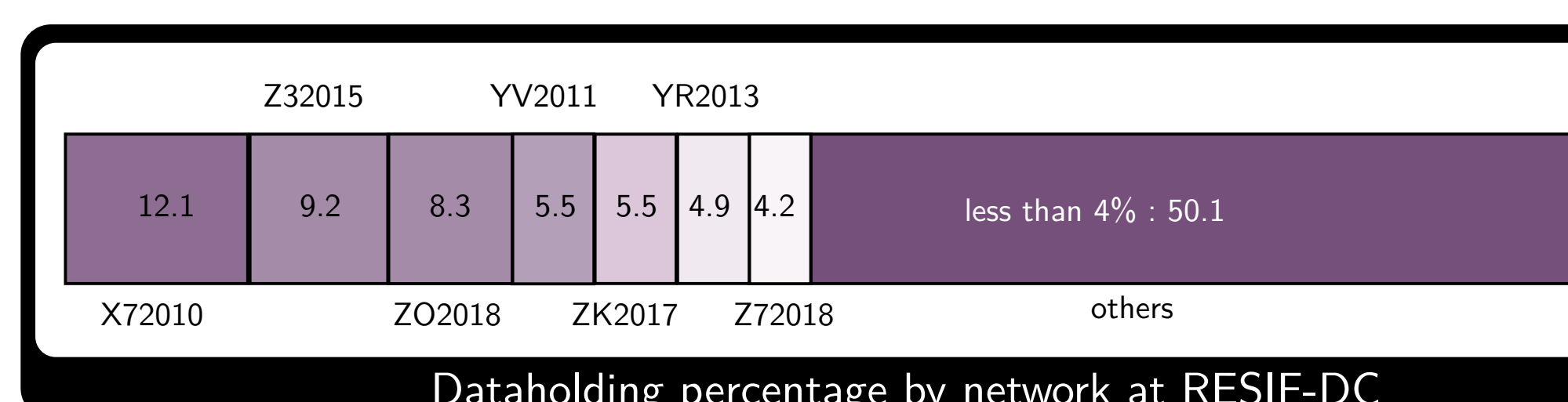
Large-N experiments yield high data volumes and scientific use cases are distinct from other networks. We built a separate workflow to manage these specificities

Datacenter infrastructure

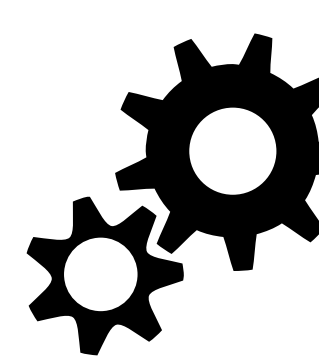


Distribution statistics

2 300 000 datasetselect requests/month
5.7 TB distributed/month
70 TB of validated seismic data
70 Networks



Future works



Core Trust Seal Certification RESIF-DC is taking part in the CEDRE ANR project aiming at certifying datacenters hosting earth science data in France.

Usage statistics webservice RESIF-DC is developing a webservice to publish relevant statistics for the PIs

YASMINE Yet Another Stationxml Metadata Editor is an ongoing joint development IRIS/RESIF to provide a new tool for StationXML edition, featuring batch processing. This tool will be extensively used by regional nodes

SICACO a tool that automatically fills a seismic data archive, corrects overlaps and requests data to fill the gaps. Data are regularly fetched from a pool of different sources (seismic station, local archive...)

Large-N data management: We build a specific workflow to manage Large N experiences, store and distribute them as PH5 archives, using the PH5 suite. Work in progress to distribute the data selectively.