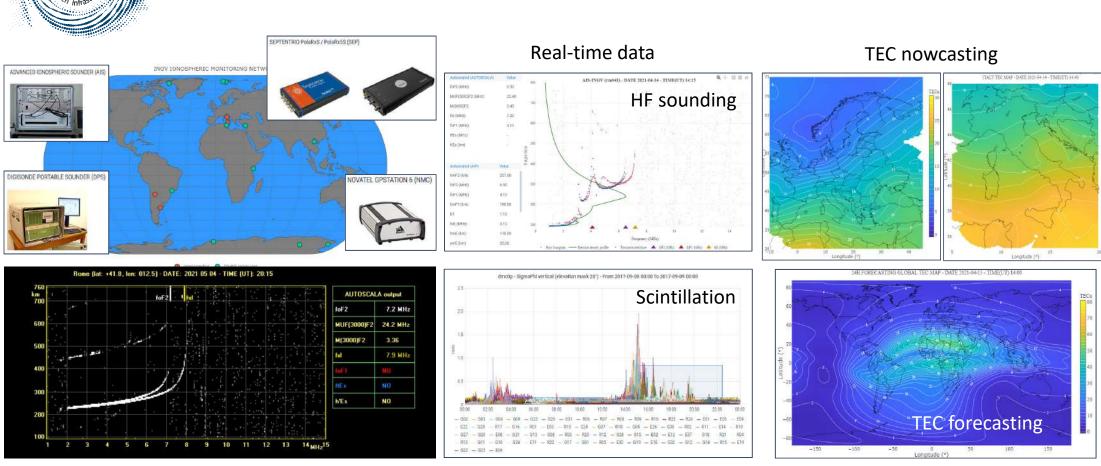


## INGV node overview



INGV developed its own ionograms scaling software named AUTOSCALA

INGV performs continuous HF soundings since 1950 and GNSS ionospheric scintillation measurements since 2003.

Cesaroni et al., 2020

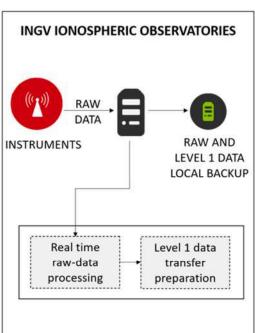


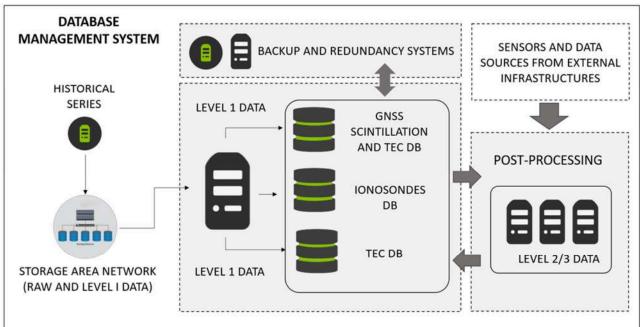
## The back-end: The Space Weather Information Technology (SWIT) system

ACQUISITION AND TRANSMISSION LAYER

DATABASE MANAGEMENT SYSTEM AND POST PROCESSING LAYER

ACCESS AND
DISSEMINATION LAYER







eSWua web-service

Metadata, persistent identifier,...

Data Catalogs and Portals

**RAW DATA** 

**LEVEL 1 DATA** 

LEVEL 1 DATA
PREPARATION

**DATABASES INGESTION** 

HIGHER LEVEL
DATA AND PRODUCTS

**ONLINE SERVICES ETC.** 

## The front-end: eSWua website (eswua.ingv.it) dmc0p - S4 vertical (elevation mask 15") - From 2020-10-10 07:13 To 2020-10-10 10:13 ARCTIC - NYAOP tal satellites in view above 15° Last data transmitted Total satellites in view above 15° 1.32% 0.02% **NEAR-REAL TIME ALERTS AND MONITORING NEAR-REAL TIME AND HISTORICAL DATA TIME-SERIES** eSWua electronic SPACE WEATHER upper atmosphere **IONOSPHERIC DATA, TOOLS AND SERVICES INTERACTIVE** MAPS AND HF SYSTEM **PRODUCTS** NEAR-REAL TIME NEAR REAL-TIME AND WEBSITE-BASED • NEAR-REAL TIME ITALY HALY TEC MAP - DATE 2020-10-16 - TIMESUTI 09:40 dmc00 - 54 vertical mag (elevation mask 15") from 2020-10-10 06 44 00 to 2020-10-10 09 44 00 VERTICAL SOUNDINGS HISTORICAL DATA FOR DOWNLOAD TOOLS AIS-INGV (rm041) - DATE 2020-10-10 - TIME(UT) 09:30 TEC MAPS SCINTILLATION INDEX RESTful WEB-SERVICE NEAR REAL-TIME AND NEAR-REAL TIME EUROPE AND GNSS PARAMETERS HISTORICAL DATA FOR TEC MAPS JSON INTERCHANGE AUTOSCALED AND S4 SCINTILLATION MAPS FORMAT DATA • NEAR-REAL TIME AND VALIDATED IONOSPHERIC ANALYSIS AND

PARAMETERS

ANALYSIS AND

foF2, M(3000)F2

**COMPARISON TOOLS** 

**NOWCASTING MAPS** 

24H FORECAST WORLD

TEC MAPS

MEAN TEC DATA

**COMPARISON TOOLS** 

ANALYSIS AND

• TEC KEOGRAM

**COMPARISON TOOLS** 

COLLECTED AT HIGH.

MIDDLE AND LOW

LATITUDES

AVAILABILITY OF DATA

DISTRIBUTION

UNRESTRICTED ACCESS

DOI AND INTEROPERABLE

METADATA STANDARD

OPEN AND

(CC-BY 4.0)

(soon)