



Project of the FP7 SPACE Programme

Problem-oriented Processing and Database Creation for Ionosphere Exploration



EUROPEAN COMMISSION
European Research Area



General information

Project title: *Problem-Oriented Processing and Database Creation for Ionosphere Exploration*

Short title: *POPDAT*

FP-7 Direction: Activity 9.2 – Strengthening Space Foundations
Area 9.2.1: Research to support space science
and exploration

Sub-area – 9.2.1.3: Exploitation of space science and
exploration data

Terms of execution: 01.06.2011 - 30.04.2013

Requested EU contribution: 1 374 209.00 €

Abstract

The Project purpose is the problem-oriented processing of data collected and stored by former ionospheric satellite missions.

At a first stage of the Project implementation, the different types of wave data will be selected, processed and arranged in topical catalogues: AGW, TID, and ELF-VLF plasma emissions. Then the Ionosphere Wave Service will be created including the composition of catalogues metadata to provide useful tool to access the database through a web portal.

Ionosphere Wave Service will be promoted to a great number of specialists working in the numerous theoretical and applied space oriented branches.

The particular goals of the POPDAT Project are:

- *Collection of datasets from different sources which concern the wave-like phenomena in ionosphere;*
- *Appropriate design of the flexible software tools for the search of wavelike behaviors detected in the satellite datasets;*
- *Creation of thematic catalogues of ionosphere perturbations;*
- *Implementation of a Ionosphere Wave Service accessible to scientific communities and public users;*
- *Liaison with ULISSE information system;*
- *Creation of Ionosphere Virtual Dynamic Observatory to assist educational activities;*
- *Dissemination and promotion of the Ionosphere Wave Service at topical conferences and in scientific and public press.*

POPDAT Concept

Problem-oriented data processing

WP1

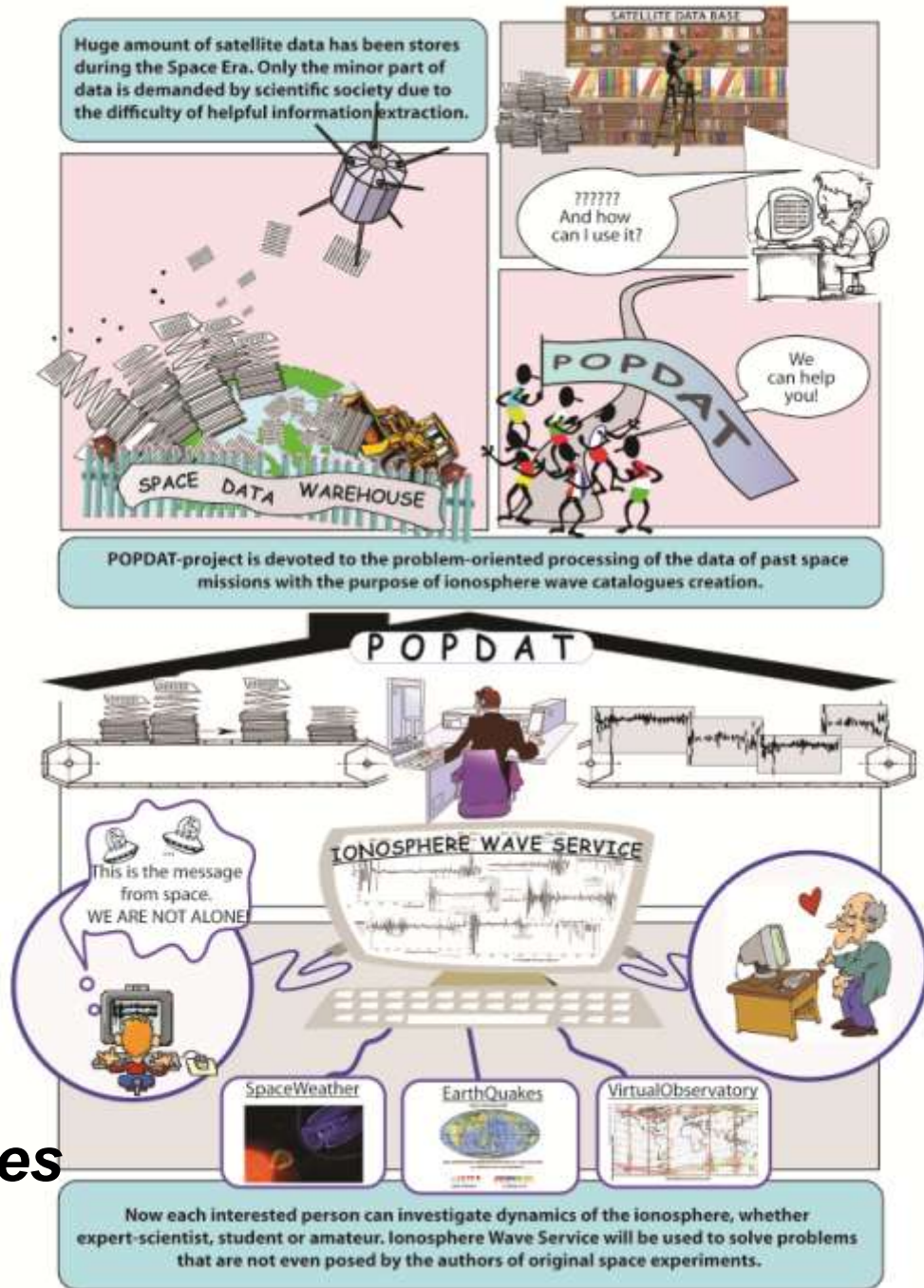
POPDAT

WP2

WP3

*Ionosphere
Wave Service*

*Wave
catalogues*



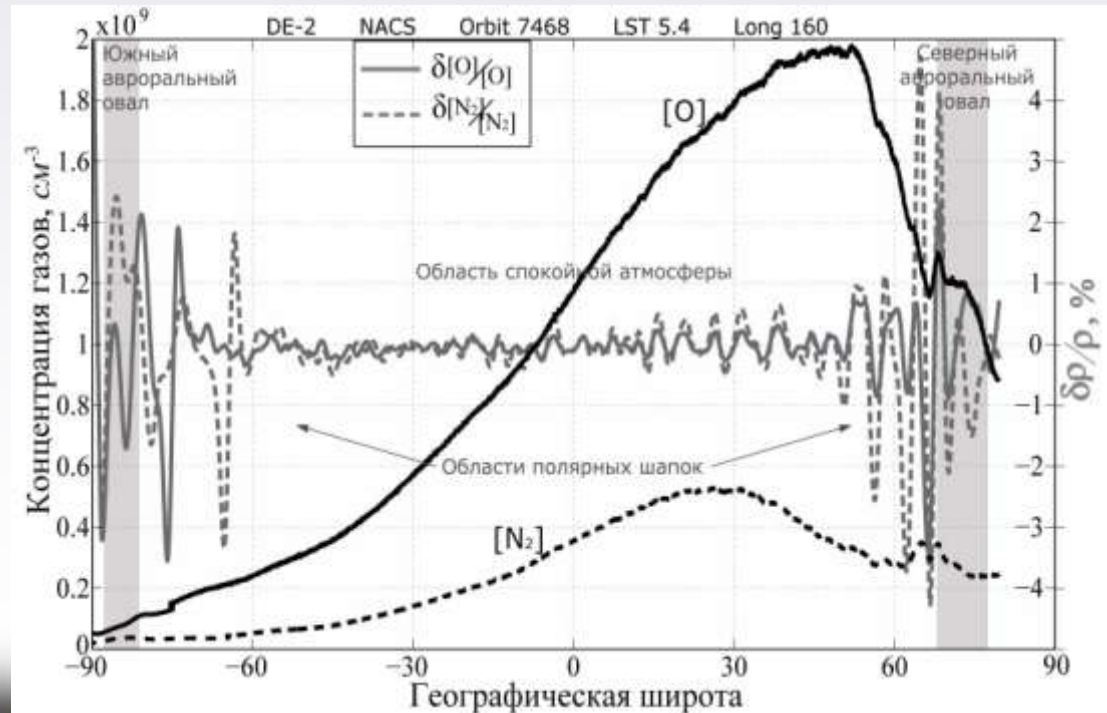
WP1. Problem-oriented data processing of selected space experiments

Task 1.1: Ionosphere satellite experiments review and clustering according to the observed wave processes

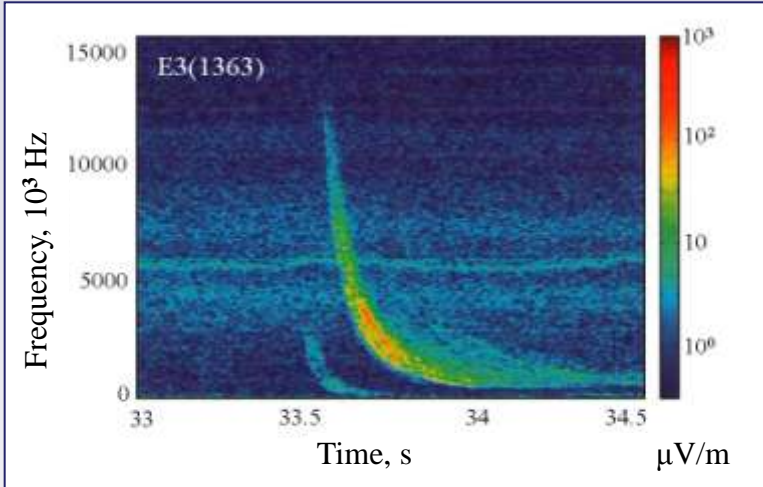
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33669947	1.774781E+09	2.50	0.000000E+00	0.00	6.250185E+05	8523	216.13	-62.45	5
33670947	1.768981E+09	2.50	1.158804E+07	29.50	0.000000E+00	8523	216.16	-62.52	5
33671947	1.770030E+09	2.50	1.172935E+07	30.50	6.064271E+05	8523	216.20	-62.59	5
33672947	1.765016E+09	2.50	1.174215E+07	31.00	7.636427E+05	8523	216.23	-62.65	5
33673947	1.764352E+09	2.50	1.151687E+07	29.00	9.106152E+05	8523	216.26	-62.72	5
33674947	1.761281E+09	2.50	1.162260E+07	30.00	1.127852E+06	8523	216.29	-62.79	5
33675947	1.758037E+09	2.50	1.159393E+07	29.50	0.000000E+00	8523	216.33	-62.86	5
33676947	1.755284E+09	2.50	1.159316E+07	29.50	7.553691E+05	8523	216.36	-62.93	5
33677947	1.745912E+09	2.50	1.156321E+07	29.50	6.622990E+05	8523	216.39	-62.99	5
33678947	1.753515E+09	2.50	1.179795E+07	31.50	0.000000E+00	8523	216.42	-63.06	5
33679947	1.749312E+09	2.50	1.151354E+07	29.00	1.115346E+06	8523	216.46	-63.13	5
33680947	1.739588E+09	2.50	1.148820E+07	29.00	0.000000E+00	8523	216.49	-63.20	5

Task 1.2: Theoretical substantiation and development of the methodology of wave disturbances selection from satellite data

Task 1.3: Data mining



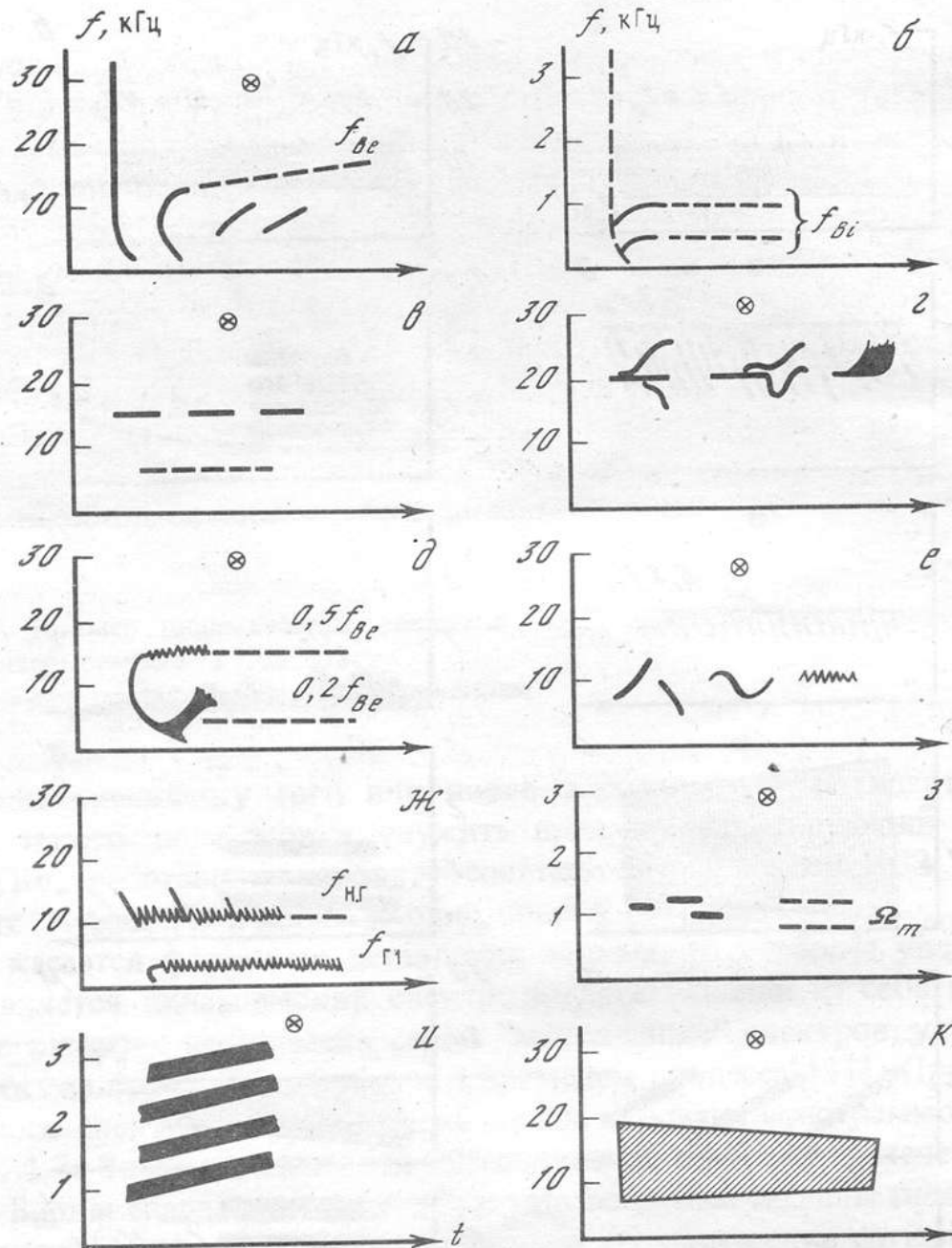
WP2. Creation of topical catalogues



Task 2.1: Inventory of users needs

Task 2.2: Optimization of the list of physical parameters and their structuring in catalogues

Task 2.3: Creation of catalogues which concern the wave-like phenomena in ionosphere



WP3. Ionosphere Waves Service creation

Task 3.1: Service requirements

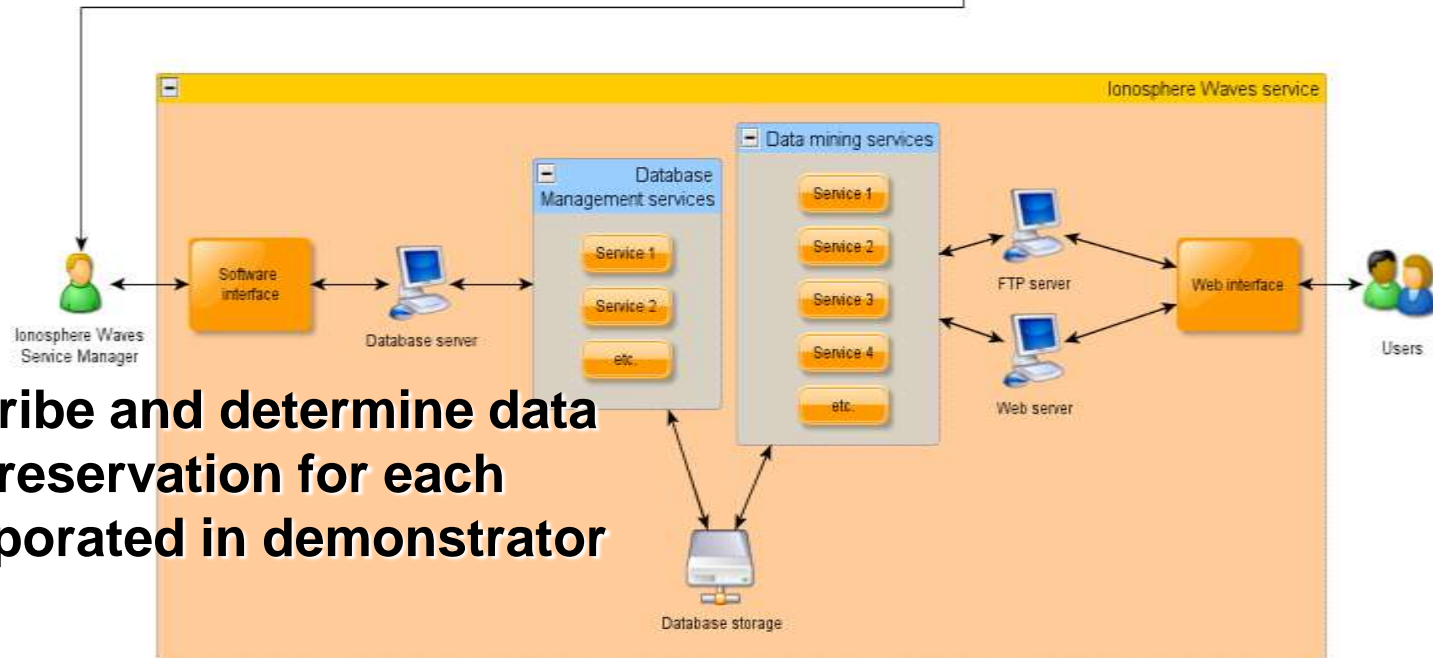
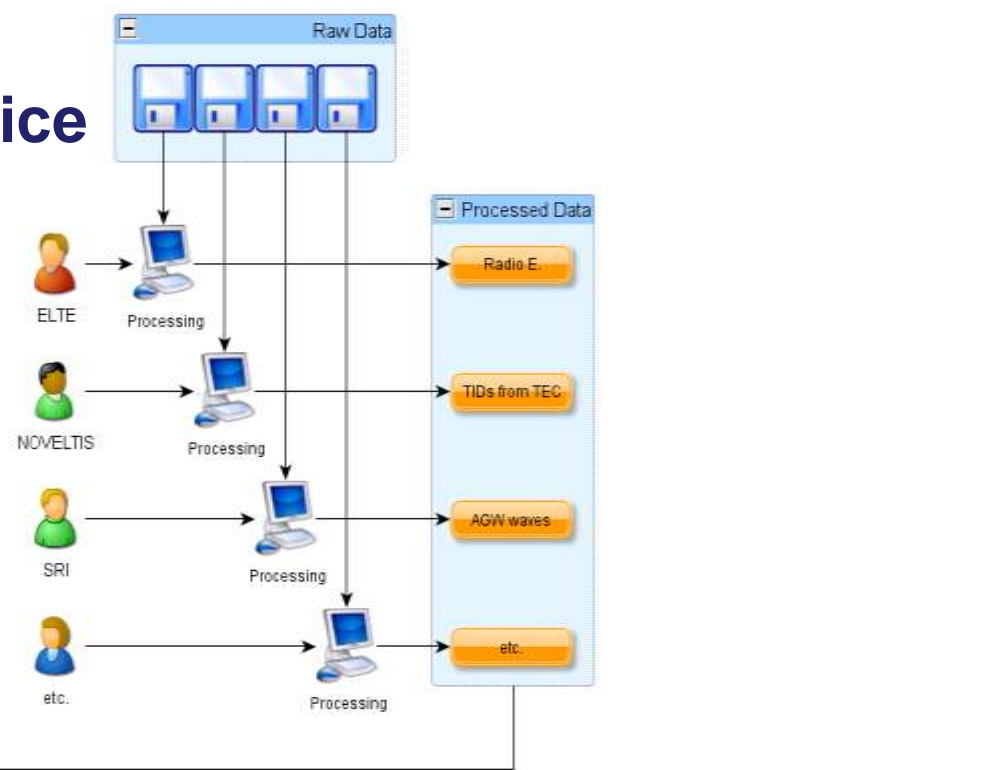
Task 3.2: Service architecture design

Task 3.3: Development of the service

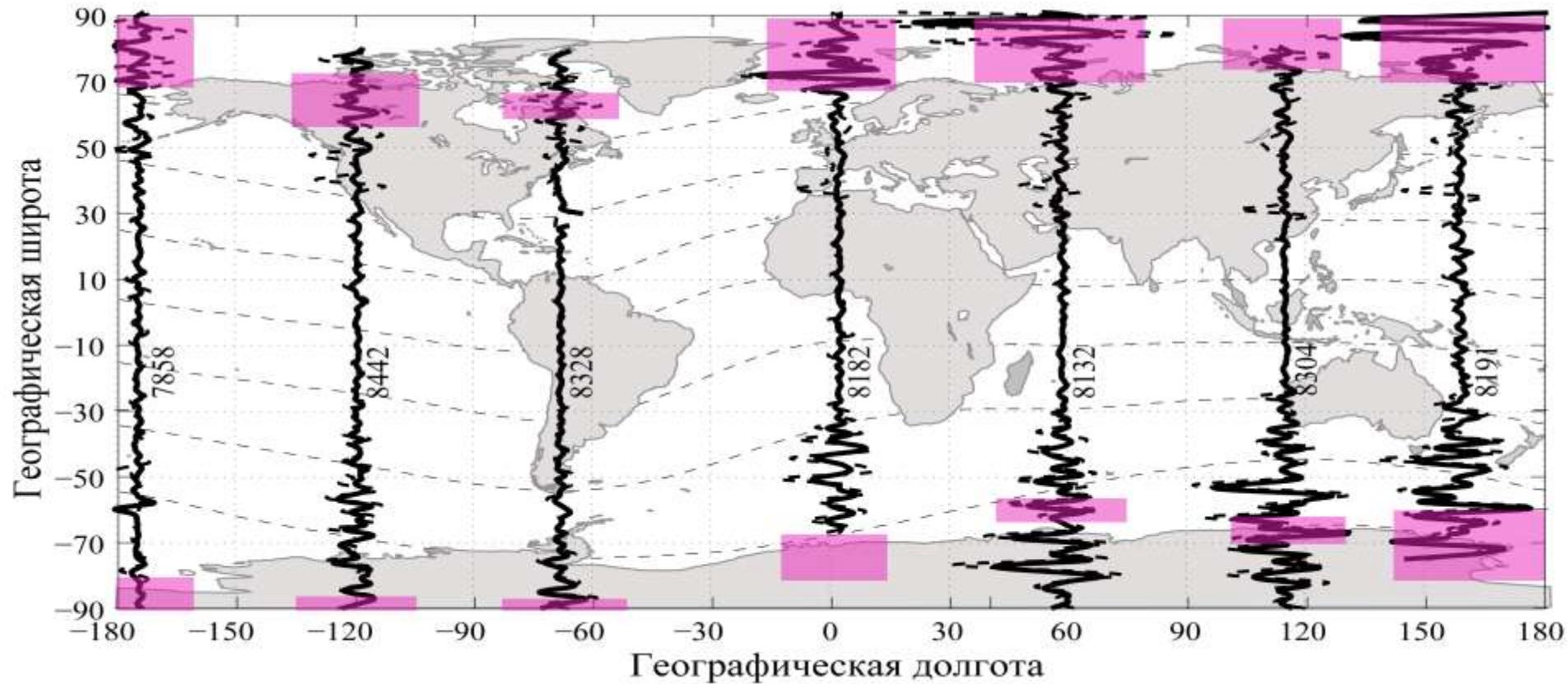
Task 3.4: Validation of the service

Task 3.5: Deployment of the service

Task 3.6: To describe and determine data policy and data preservation for each experiment incorporated in demonstrator



WP4. Study results dissemination and education



Task 4.1: Project website creation

Task 4.2: Exhibition of the efficiency of Ionosphere Wave Service application in solving certain scientific problems design

Task 4.3: Information events

Task 4.4: Traditional dissemination activities

Project Consortium



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