



HAPI Interface

of the

Trieste Solar Radio System (TSRS)

Heritage Archive

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The Trieste Solar Radio System (TSRS)

2 Solar Radio Polarimeters
Frequencies: Metric, Decimetric
Coronal Emission (237-2695
MHz)
Polarisation: Circular (RCP/LCP)
Time Resolution: Millisecond
Site: Basovizza Observing Station
(INAF-OATS, Italy)
Data Period: 1969–2010 (4 Solar
Cycles)
Analog acquisition: 1969-1999
Digital acquisition: 1999-2010
Status: Facility is inactive (Legacy
Data Inaccessible)



Modernizing the inaccessible legacy archive

Goal:

To Modernise and refurbish the TSRS Heritage Archive (TSRS-HA) into a durable, open resource.

To serve as a Testbed for the upcoming TSRS2.0 facility, a future node of the Italian Space Weather network.

Mandate:

Follow FAIR principles (Findable, Accessible, Interoperable, Reusable) leveraging on existing community standards.

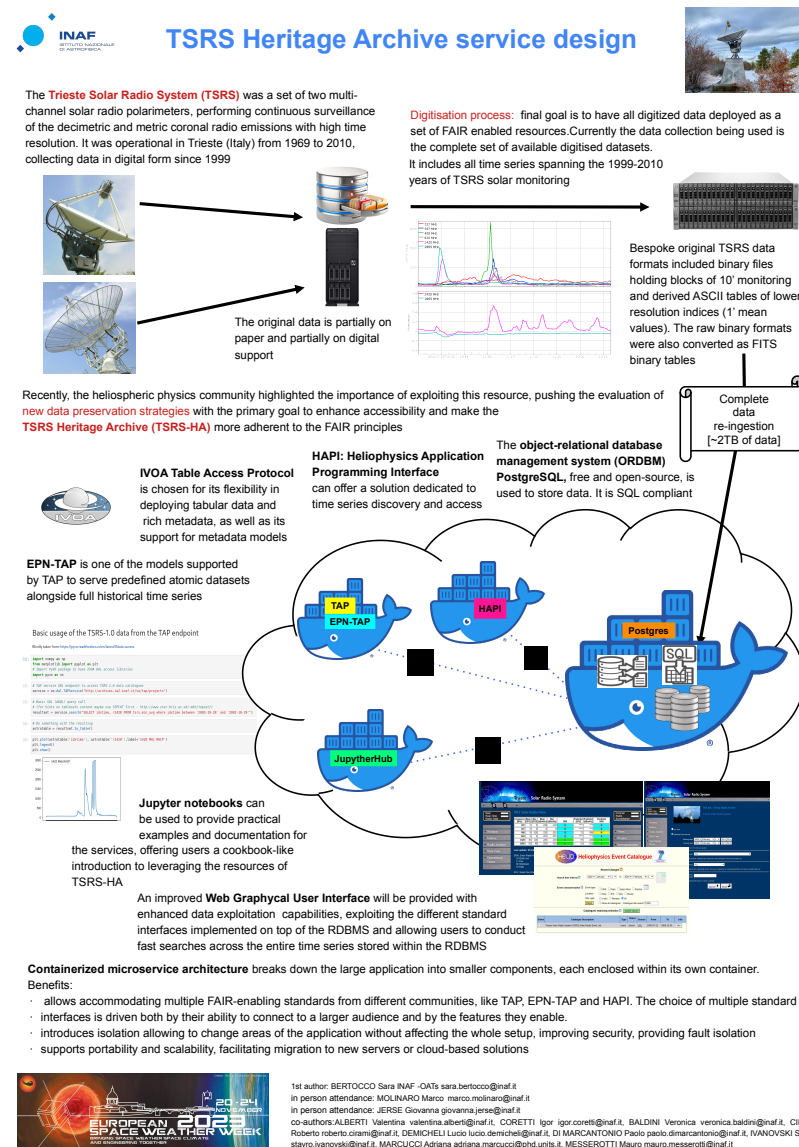
Legacy Recovery:

Restoration & Digitization of Analogue Media

(magnetic tapes, ceramic supports and photographic plates).

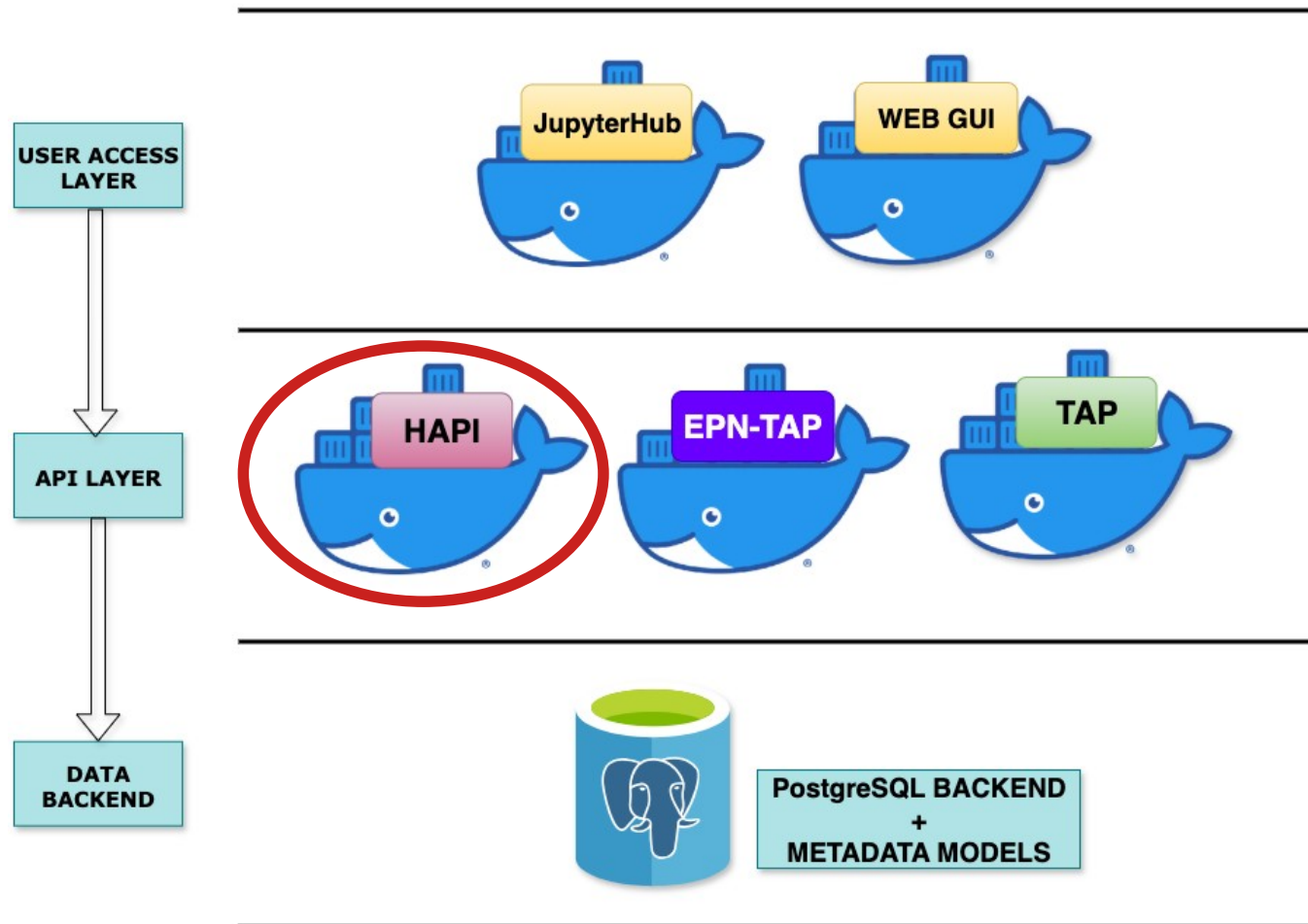
Outcome: This process is to extend the Temporal Coverage (back to 1969) and enrich historical SRB catalogue

The project: A bit more details



Our project: Standard Interfaces & Access Services

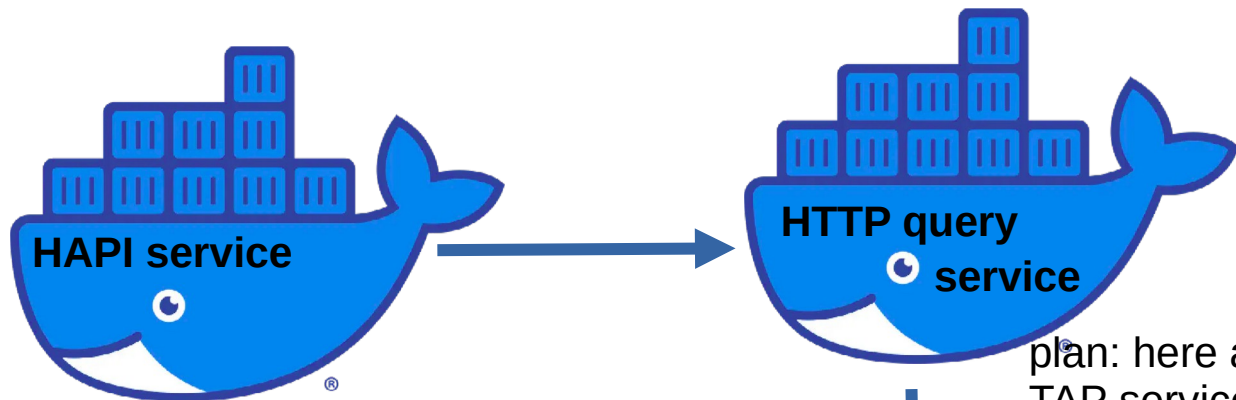
FAIR-Compliant Containerised Architecture 🐳



Simple HAPI service architecture

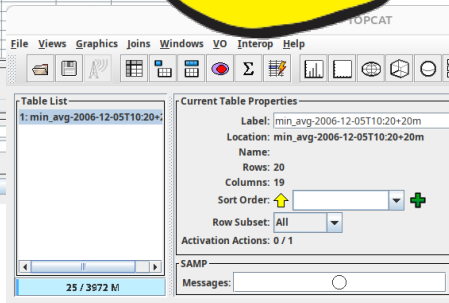
~~Web GUI~~

Topcat



plan: here a TAP service

github.com/hapi-server/server-nodejs



TOPCAT(1): Table Browser

Window Rows Help

Table Browser for 1: min_avg-2006-12-05T10:20+20m

	idtime	l237	r237	s237	l327	r327	s327
1	2006-12-05T10:20:00	7.3	7.1	14.4	5.8	7.6	13.5
2	2006-12-05T10:21:00	15.3	14.9	30.1	6.2	8.2	14.4
3	2006-12-05T10:22:00	8.3	8.	16.3	6.3	8.3	14.6
4	2006-12-05T10:23:00	7.6	9.7	17.3	6.3	8.2	14.5
5	2006-12-05T10:24:00	7.4	7.1	14.5	6.3	8.2	14.4
6	2006-12-05T10:25:00	7.8	7.7	15.5	6.3	8.2	14.5
7	2006-12-05T10:26:00	5.	4.9	9.8	7.3	9.5	16.8
8	2006-12-05T10:27:00	22.6	41.6	64.2	14.8	19.3	34.1
9	2006-12-05T10:28:00	1345.6	1622.1	2967.8	82.1	107.1	189.3
10	2006-12-05T10:29:00	118.5	128.1	246.5	91.8	122.5	214.3
11	2006-12-05T10:30:00	193.	210.7	403.7	98.9	132.3	231.2
12	2006-12-05T10:31:00	143.9	149.5	293.4	95.1	119.4	214.6
13	2006-12-05T10:32:00	128.1	127.2	255.3	73.3	88.4	161.7
14	2006-12-05T10:33:00	104.8	91.7	196.5	49.4	56.6	106.1
15	2006-12-05T10:34:00	65.6	56.5	122.1	30.8	36.	66.8
16	2006-12-05T10:35:00	31.4	26.8	58.2	17.8	21.3	39.1
17	2006-12-05T10:36:00	40.2	155.6	195.8	14.5	17.9	32.3

Total: 20 Visible: 20 Selected: 0

Available datasets, by now

Starting from the original data of solar flux samples per milliseconds a test database has been derived containing 3 datasets:

- Two time series:
 - **min_avg**: average indices per minute
 - **min_max**: maximum indices per minute
- A file catalog:
 - **min_idx_files**: containing one file per day of total intensity index (right hand circular polarization + left hand circular polarization) per minute

The available time period, by now, is
from the 26th february 2006
to the 4th april 2009

HAPI Query

Window HAPI Help

Service Selection

HAPI Server: CDAWeb

HAPI URL: http://tsrs-ha.ia2.inaf.it:8999/TSRS/hapi

Chunk Limit: 1

Datasets

min_avg
min_idx_files
min_max

Filter

3 / 3

Dataset Parameters

Include	Name	Type	Size	Units	Description
<input checked="" type="checkbox"/>	idxtime	isotime	24		
<input checked="" type="checkbox"/>	l237	double			
<input checked="" type="checkbox"/>	r237	double			
<input checked="" type="checkbox"/>	s237	double			
<input checked="" type="checkbox"/>	l327	double			
<input checked="" type="checkbox"/>	r327	double			
<input checked="" type="checkbox"/>	s327	double			
<input checked="" type="checkbox"/>	l408	double			
<input checked="" type="checkbox"/>	r408	double			

Dataset Metadata

Cadence:

Max Duration:

Resource URL:

Interval

Start Date: 2006-12-05T10:20:00

Stop Date: 2006-12-05T10:40:00

2004 2005 2006 2007 2008 2009 1sec 1min 1hr 1day 1m 1yr

>= 2003-02-26T07:50:00Z
<= 2009-06-04T16:30:00Z

OK

TOPCAT

File Views Graphics Joins Windows VO Interop Help

Table List

1: min_avg-2006-12-05T10:20+20m

Current Table Properties

Label: min_avg-2006-12-05T10:20+20m
 Location: min_avg-2006-12-05T10:20+20m
 Name:
 Rows: 20
 Columns: 19
 Sort Order: +
 Row Subset: All
 Activation Actions: 0 / 1

SAMP

Messages:

25 / 3972 M

Data tables

TOPCAT(1): Table Browser

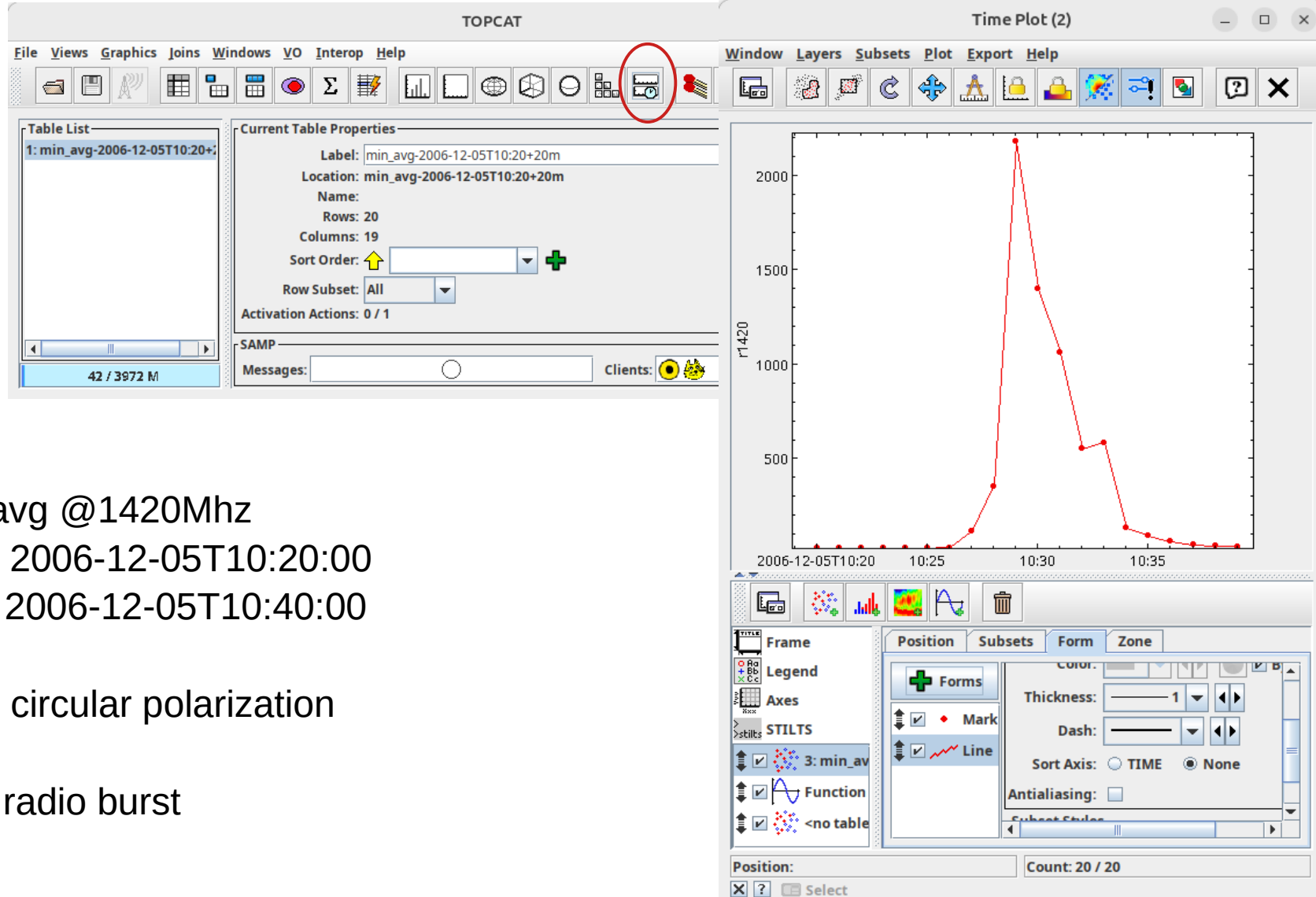
Window Rows Help

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Display events



Display events

“Bastille Day” event - 14 July 2007

Dataset: min_avg @1420 MHz
Start: 2007-07-14T08:30:00
Stop: 2007-07-14T13:00:00

Parameters: circular polarization
top figure: [Left + Right]
bottom figure: [Left - Right]

