AENEAS- WG5
Access and Knowledge creation

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(INAF- IRA / Italian node of the European ARC)

*This work package (WP5) is focused on the **interface between a distributed European SKA Data Centre (ESDC) and a distributed body of end users** whose goal is the exploitation of SKA data for knowledge creation. WP5 will therefore study the design of "user interaction models" that could be implemented for the ESDC*

Task 5.1 Survey of existing user interaction models for large-scale radio astronomy facilities and **integration of WP5 outputs into consolidated ESDC design study** (responsible M. Massardi)

Task 5.2 Recommendations for the design of user interfaces for data discovery, access, and retrieval (responsible R. Smareglia)

Task 5.3 Recommendations for the design of user interfaces for data processing, reprocessing, analysis, and visualization (responsible A. Costa)

Task 5.4 Integration with VO Interoperability Framework (responsible C. Knapic)

Task 5.5 Recommendations for the resourcing of an ESDC user interaction model (responsible J. Brand)

Task 5.6 Recommendations for a plan of user community formation and knowledge distribution (responsible M. Massardi)

Deliverable (number)	Deliverable name	Work package number	Short name of lead participant	Type	Dissemination level	Delivery date (in months)
D5.1	Survey report	5	INAF	R	PU	18
D5.2	Gap analysis	5	INAF	R	PU	18
D5.3	Design recommendations #1	5	INAF	R	PU	24
D5.4	Design recommendations #2	5	INAF	R	PU	24
D5.5	Applicability of VO framework	5	INAF	R	PU	28
D5.6	User interaction model resourcing	5	INAF	R	PU	28
D5.7	Growing the ESDC community	5	INAF	R	PU	28
D5.8	Final integration of WP5 materials	5	INAF	R	PU	34

D5.1 : Survey report [18]
Survey of existing user interaction models for traditional and next generation radio telescope facilities, with an emphasis on distributed service delivery models in a European context.

D5.2 : Gap analysis [18]
The gap analysis will be limited to an identification of gaps. Detailed analysis of the gaps will take place in the other tasks (WP5.2 to WP5.6) and will lead to recommendations in key areas.

D5.3 : Design recommendations #1 [24]
Recommendations for the design of user interfaces for data discovery, access, and retrieval for an ESDC

D5.4 : Design recommendations #2 [24]
Recommendations on the design of user interfaces for data processing, re-processing, analysis, and visualization for the ESDC

Milestone number[18]	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	Definition of WP5.1 survey scope	4 - INAF	3	Definition of WP5.1 survey scope
MS4	WP5.1 survey data collected	4 - INAF	6	WP5.1 survey data collected
MS5	Define scope of WP5.4 VO report	4 - INAF	6	Define scope of WP5.4 VO report
MS8	WP5.1 survey discussion paper	4 - INAF	8	WP5.1 survey discussion paper
MS9	Consideration of WP5.1 survey discussion paper in WP5.2-6	4 - INAF	8	Consideration of WP5.1 survey discussion paper in WP5.2-6
MS18	Draft WP5.1 survey and gap analysis	4 - INAF	12	Draft WP5.1 survey and gap analysis
MS24	Initial elaboration of WP5.1 gap analysis in WP5.2-6	4 - INAF	15	Initial elaboration of WP5.1 gap analysis in WP5.2-6
MS29	Consideration of WP5.1 survey in WP5.2,3,5,6	4 - INAF	20	Consideration of WP5.1 survey in WP5.2,3,5,6
MS32	Joint Milestone (WP5) demonstration of compatibility of user interface specification with example work flow models	2 - UMAN	24	Joint Milestone (WP5) demonstration of compatibility of user interface specification with example work flow models

Advanced European Network of E-infrastructures
for Astronomy with the SKA

Questions for Astronomical facilities

The Square Kilometre Array will enable transformational science across a wide range of research areas. By the same token, the large scale, rate, and complexity of data the SKA will generate present challenges in data management and computing that are similarly world-leading. Based on current projections, the SKA Observatory, once operational, is expected to produce an archive of standard data products with a growth rate on the order of 300 petabytes per year. Although the challenges associated with populating and maintaining the SKA science archive are already impressive, these data products actually represent only the first part of the full science extraction chain. Any further processing and subsequent science extraction by users will require significant, additional scientific, computing and storage resources in the form of a federated, global network of SKA Regional Centres.

Answered by European ARC, JIVE, VLBA, E-MERLIN, LOFAR, ATNF
Italian facilities

Sent to the user communities of the astronomical facilities and to members of SKSP

Answered by 200 people (mostly extragalactic radioastronomers)

SURVEY RESULTS & GAP ANALYSIS AND BRIDGING

1) System needs
(goals towards user&tel)
2) User definition
(community/mentality)
3) Services provided
(duties/activities/policy/limitations)
4) Accessibility
(human interaction/interfaces)
5) Resources
(personnel/tools/infrastructures)

1) SYSTEM NEEDS

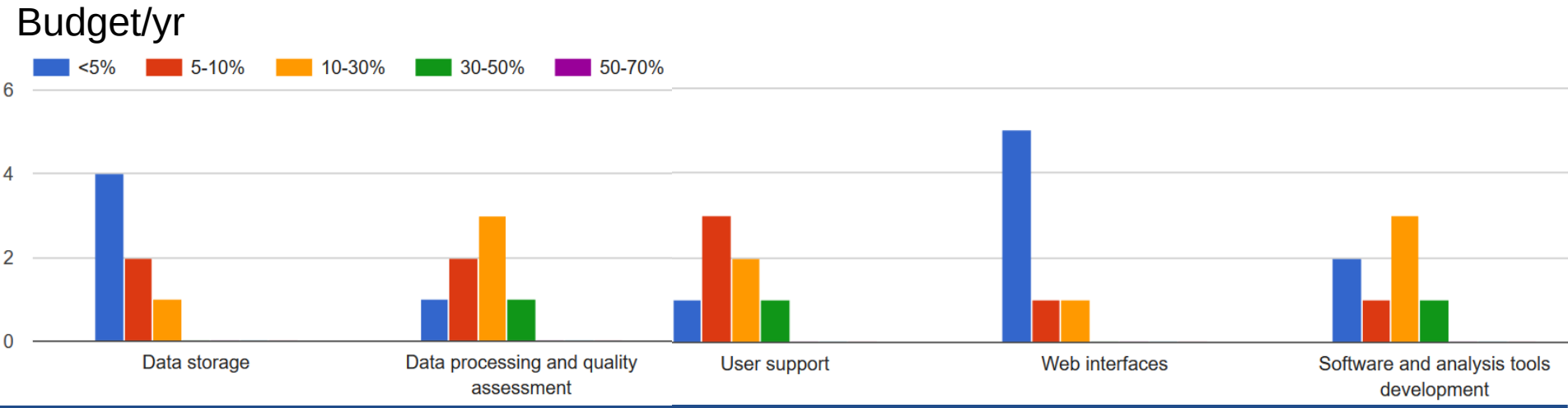
Current facilities

-Science exploitation
-Observation driven
- One site (mostly)
-Astronomical system
-ICT to support

SKA

-SCIENCE EXPLOITATION
-ARCHIVE DRIVEN
-GLOBAL COLLABORATION
-ICT & Astronomical SYSTEM

GAP
-Data handling/storage
-Cooperative interaction
-New skills



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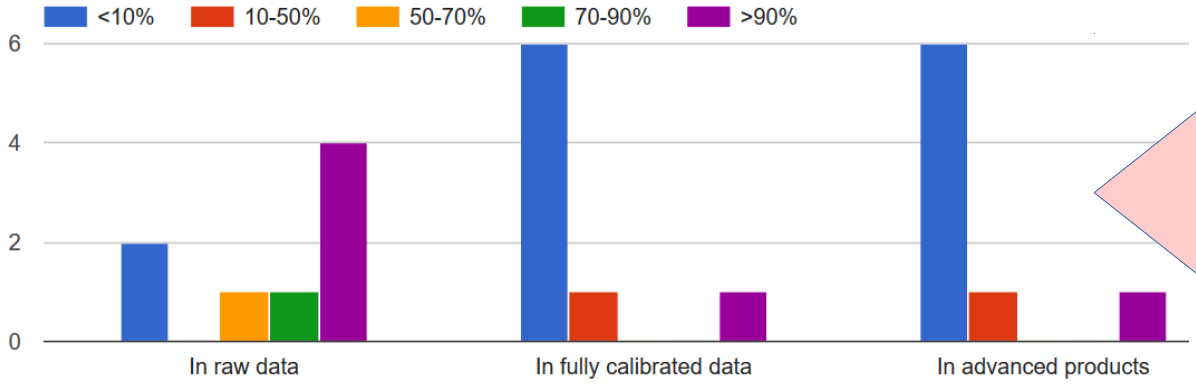
Data distribution



Questions
- what the role of SRDC in the Global Alliance?

INTERACTION WITH WP2

2) USER DEFINITION

Current facilities

- PI at first
- Archive miners
- Expert/self-taught
- B2E data flow control

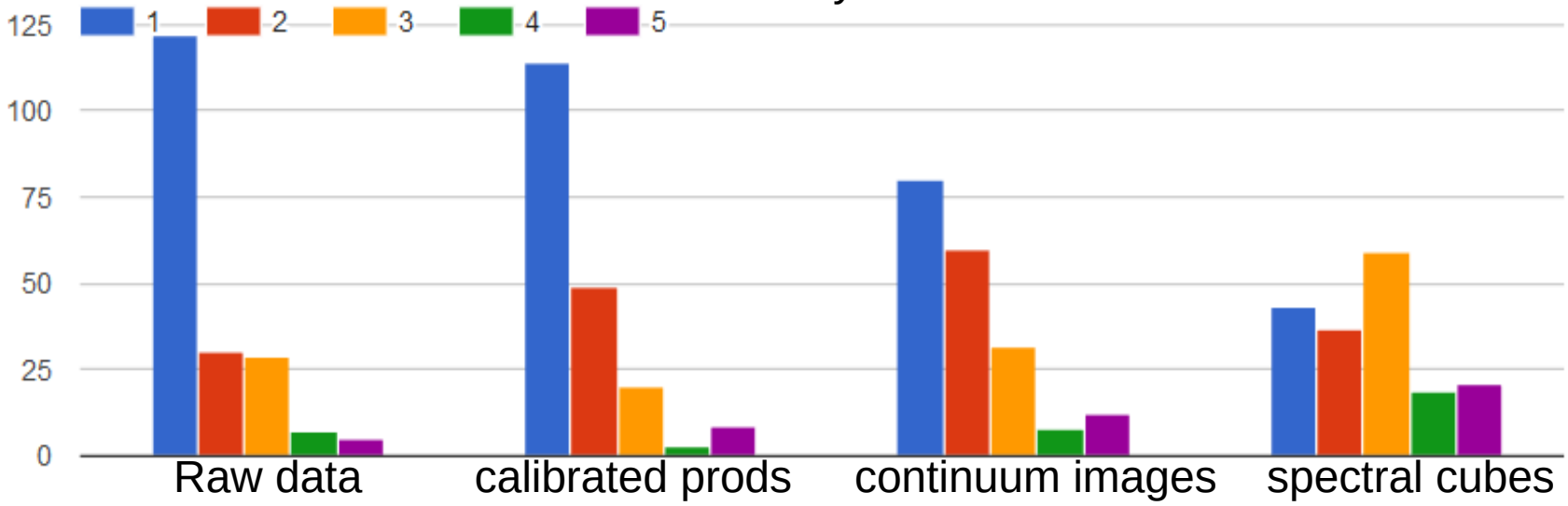
SKA

- KSP + OPEN SKY PI
- ARCHIVE MINERS
- MUST TRUST ON SYSTEM

GAP

- Mentality change
- Language IT/Astro
- Community formation

Needed in the archive



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GAP
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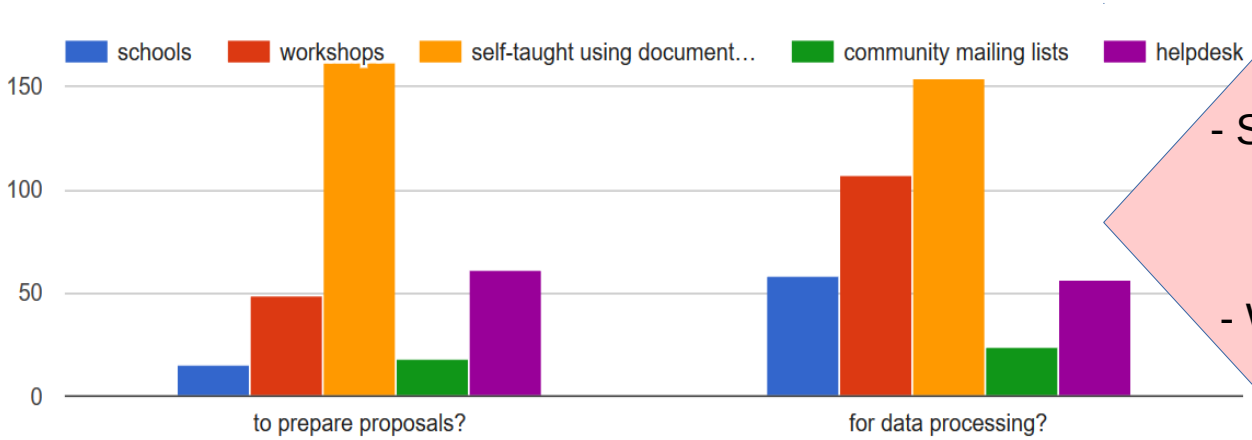
Training



Questions
- Support only after data acquisition or in any phase of the project?
- How ksp expert contribute to telescope? Respective role?
- What does the user want to trust?

3)SERVICES PROVIDED

Current facilities

- Proposal preparation
- Quality assessment
- Software development
- Archive management
- Community training

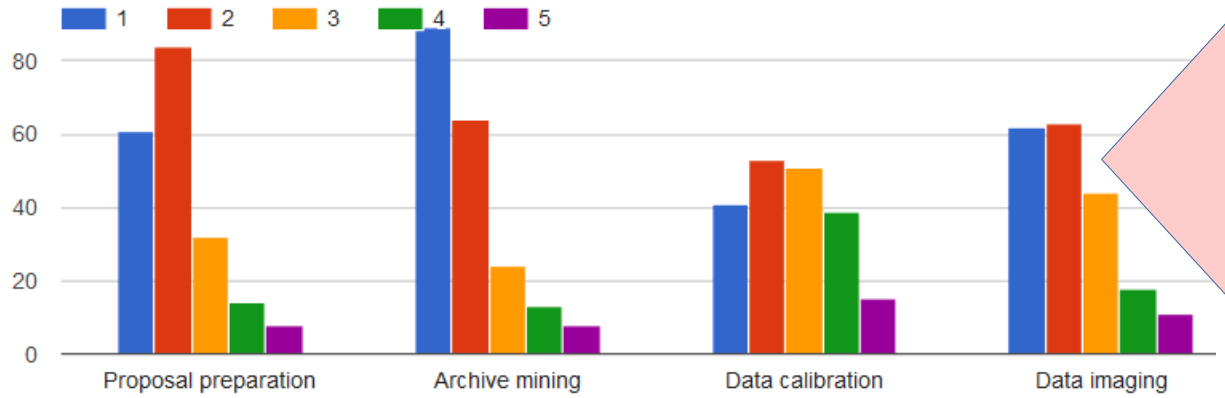
GAP

Users should bring code to data

SKA

- TEL PRODUCTS DISTRIBUTION
- SOFTWARE DEVELOPMENT
- ADVANCED PRODUCTS PRODUCTION
- STORAGE MAINTENANCE
- COMMUNITY TRAINING

Rate the support for each stage (1=none)



Questions

- what is the SKA product?
- what will be handled by SRDC?
-what is the user expectations?

INTERACTION WITH WP3-4

4)ACCESSIBILITY

Current facilities

-F2F, Helpdesk
-Documentation
-Policies
-Interfaces

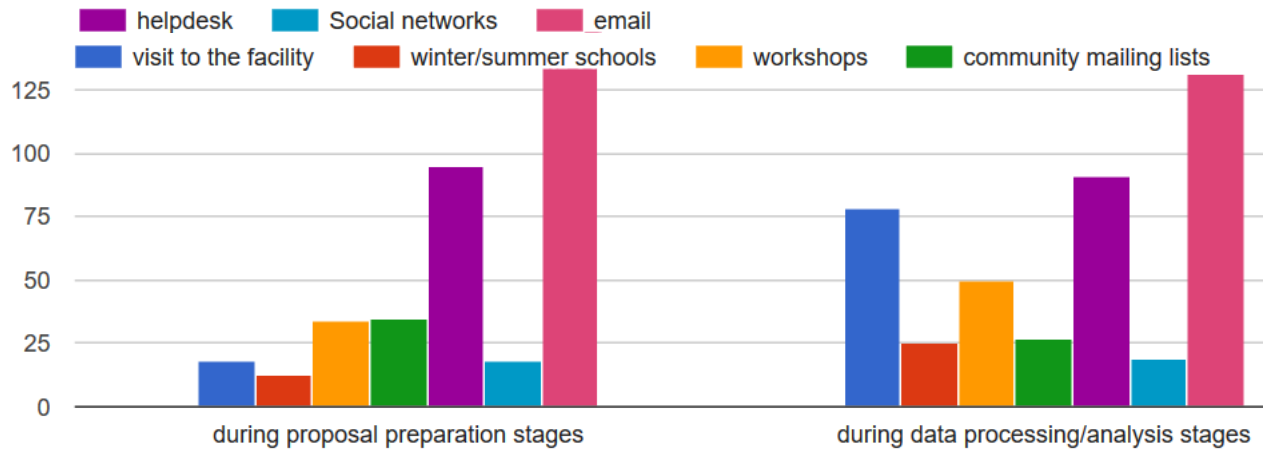
SKA

-F2F, HELPDESK
-DOCUMENTATION
-POLICIES
-INTERFACES

GAP

-Data size
-Data complexity
-Global collaboration
-Visibility of the service

Preferred source of information



Questions
-what is the user expectations?

INTERACTION WITH WP6

5)RESOURCES

Current facilities

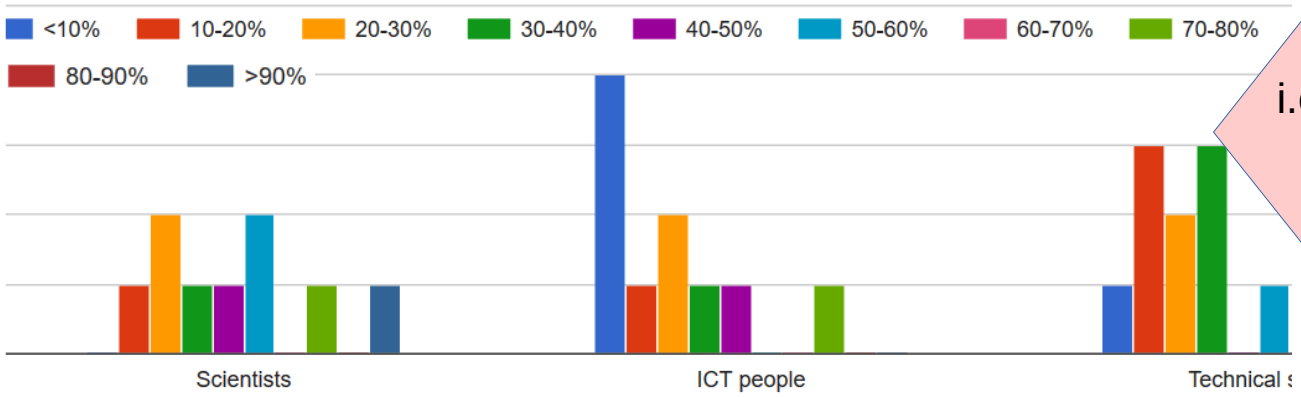
-Personnel
-User computation platform
-general processing tools
-visualization tools
-Archive query tools
-Time

GAP
-Data size
-Data complexity
-Linked activities

SKA

-PERSONNEL
-IT FACILITIES
-DEDICATED TOOLS
SRDC IS THE INTERFACE, ACCESS THE ARCHIVE, OFFERS THE COMPUTATION PLATFORM
-TIME

How is the personnel divided into?



Questions
- what is the real timeline?
i.e. what is the expected growing curve for activities?

INTERACTION WITH WP3-6

PLAN FOR 2018

WP5
SURVEYS

1) System needs
(goals towards user&tel)
2) User definition
(community/mentality)
3) Services provided
(duties/activities/policy/limitations)
4) Accessibility
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DESIGN
RECCOMENDATION