

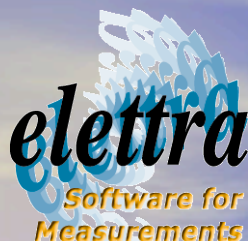
The Open Virtual Unified Office (OpenVUO)

Road to an "European Clearing House"?

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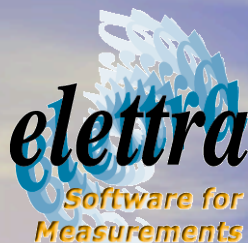
Authors: Derek Logan, Fulvio Bille', Daniele Favretto, Roberto Pugliese,
Michele Turcinovich



IA-SFS



- The Integrated Infrastructure Initiative (I3) Project IA-SFS is supported by the European Community - Research Infrastructure Action under the FP6 "Structuring the European Research Area" Programme
- IA-SFS has two strategic objectives:
 - to support transnational users of national facilities in the domain of synchrotron and FEL science
 - to support joint research activities (**JRAs**) with the purpose of:
 - enhancing the effectiveness of the facilities in serving users and in particular transnational users
 - contributing to the development of novel sources in this domain.

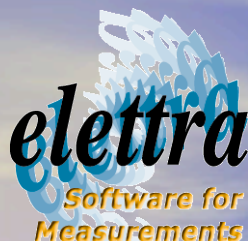


IA-SFS participants

- ELETTRA
- FZK (ANKA)
- BESSY
- CNRS (CLIO)
- DESY
- DIAMOND
- EMBL
- ESRF



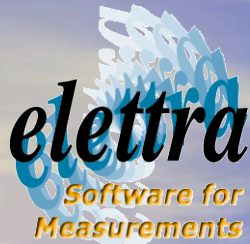
- FZR
- FOM
- ISA-UA
- MAX-lab
- SLS
- SOLEIL
- SRS
- INFN



IA-SFS/JRA1/WP1



- JRA1: improving and integrating the end user experience for macromolecular crystallography
- The generic nature of many MX experiments means that users frequently apply to more than one site for a particular project. The reasons may be
 - specific beam-lines are more suitable to some aspects of the experiment
 - immediacy of demand, the difficulty of the project
 - travel and budgetary considerations
- A common application platform would enhance the efficiency of the application procedure for the users and, if correctly implemented, might lead to a Europe-wide clearing-house for applications in this area in the mid-term



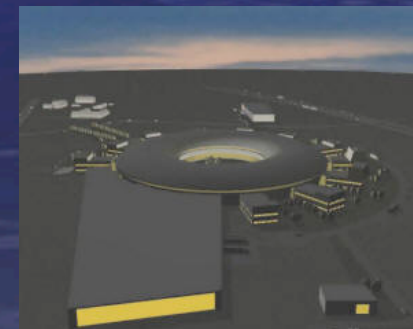
MAX-lab



MAX I-III: "home-made" user office



MAX IV (2013?)
European integration essential

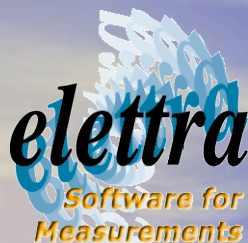




OpenVUO for IA-SFS/JRA1-WP1

- The **Open Virtual Unified Office** is a facility management system
- The OpenVUO is based on the Elettra VUO application which has been operating for more than 10 years and has now reached maturity
- The VUO application has been transformed into an Open Source project
 - this would allow the facilities which does not have this kind of application to have one at a very low cost
 - however there is only a very low possibility that a facility with an already operating VUO like application will use the OpenVUO
- Using **webservices technology**, facilities with an existing User Office need only implement a set of webservices for compatibility with the VUO





Customization of OpenVUO

VUO development portal

Places News MAX-lab LU admin Programs Databases Journals Mac Protocols EU Literature Funding RNR

MAX-lab Logout
Welcome, admin VUO

E-science MaxLAB Public

Administration

Enter your query

[Search]

Frontend	Beamline name	Short name	In house research %	Fraction of beamtime	Owner nation	Videotape	Operative
[Select] MAX-I	31	31			SWEDEN	Video N.2	Yes
[Select] MAX-I	41	41			SWEDEN	Video N.2	Yes
[Select] MAX-I	52	52			SWEDEN	Video N.2	Yes
[Select] MAX-I	73	73			SWEDEN	Video N.2	Yes
[Select] MAX-II	D1011	D1011			SWEDEN	Video N.2	Yes
[Select] MAX-II	D611	D611			SWEDEN	Video N.2	Yes
[Select] MAX-II	I1011	I1011			SWEDEN	Video N.2	No
[Select] MAX-II	I311	I311			SWEDEN	Video N.2	Yes
[Select] MAX-III	I4	I4			SWEDEN	Video N.2	No
[Select] MAX-II	I411	I411			SWEDEN	Video N.2	Yes
[Select] MAX-II	I511-1	I511-2			SWEDEN	Video N.2	Yes
[Select] MAX-II	I511-3	I511-3			SWEDEN	Video N.2	Yes
[Select] MAX-II	I711	I711			SWEDEN	Video N.2	Yes
[Select] MAX-II	I811	I811			SWEDEN	Video N.2	Yes
[Select] MAX-II	I911-2	I911-2			SWEDEN	Video N.2	Yes
[Select] MAX-II	I911-3	I911-3			SWEDEN	Video N.2	Yes
[Select] MAX-II	I911-5	I911-5			SWEDEN	Video N.2	Yes

Items: 1-17 / 17

[Add]

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VUO development portal

Places News MAX-lab LU admin Programs Databases Journals Mac Protocols EU Literature Funding RNR

MAX-lab Logout
Welcome, admin VUO

E-science MaxLAB Public

Administration

Edit Beamline

Please specify the frontend e.g. %%,042,071,...

Frontend MAX-II

Beamline name I911-2

Description Macromolecular crystallography monochromatic station 2

Short name I911-2

In house research %

Fraction

Please select a nation related to the beamline

Beamline owner country SWEDEN

Videotape Safety video for normal beamline

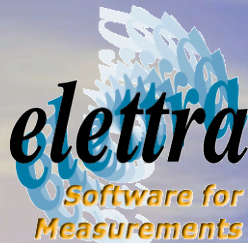
Homepage http://cassiopeia.maxlab.lu.se/index/station-2

Operative ☒

[Save] [Delete]

[Search]

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Customization of OpenVUO

phpPgAdmin

PostgreSQL 8.1.10 running on localhost:5432 -- You are logged in as user "postgres", 9th Oct, 2008 12:04PM

phpPgAdmin: Virtual Unified Office? root? public? beamlines_experiment?

Browse

1 2 Next > Last >>

Actions	id	beamline	experiment
Edit Delete	201711		32
Edit Delete	211911-2		33
Edit Delete	221911-3		33
Edit Delete	231911-5		33
Edit Delete	241711		33
Edit Delete	251711		34
Edit Delete	261711		17
Edit Delete	27D1011		1
Edit Delete	28D1011		26
Edit Delete	29D1011		29
Edit Delete	301811		27
Edit Delete	311811		32
Edit Delete	32D611		25
Edit Delete	331811		35
Edit Delete	341311		9
Edit Delete	351311		1
Edit Delete	361411		1
Edit Delete	371511-1		1
Edit Delete	38D1011		41
Edit Delete	391311		41
Edit Delete	401411		41
Edit Delete	411511-1		41
Edit Delete	421511-1		42
Edit Delete	431511-3		42
Edit Delete	44D611		37
Edit Delete	451911-2		34
Edit Delete	461911-3		34
Edit Delete	471911-5		34
Edit Delete	49D1011		40
Edit Delete	501511-3		1

30 row(s)

1 2 Next > Last >>

Back | Expand | Insert | Refresh

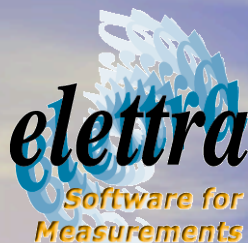
Actions	id	name
Edit Delete	1	Photoelectron Emission
Edit Delete	2	Imaging
Edit Delete	3	Scattering
Edit Delete	4	Emission/Reflection
Edit Delete	5	Absorption
Edit Delete	6	Diffraction
Edit Delete	7	Lithography

Actions	id	name
Edit Delete	1	XPS
Edit Delete	2	UPS
Edit Delete	3	Angular-resolved PES
Edit Delete	4	THz near-field Microscopy
Edit Delete	5	IR Microscopy
Edit Delete	6	X-ray Microscopy
Edit Delete	7	X-ray Tomography
Edit Delete	8	X-ray Holography
Edit Delete	9	Photoemission EM
Edit Delete	10	Fluorescence Imaging
Edit Delete	11	Medical Applications
Edit Delete	12	Elastic Scattering
Edit Delete	13	Coherent Scattering
Edit Delete	14	Inelastic Scattering
Edit Delete	15	Magnetic Scattering
Edit Delete	16	Nuclear Resonant Scattering
Edit Delete	17	Small Angle Scattering
Edit Delete	18	Wide Angle Scattering
Edit Delete	19	Time-resolved Scattering
Edit Delete	20	X-ray Fluorescence (XRF)
Edit Delete	21	Reflectometry
Edit Delete	22	μXRF
Edit Delete	23	Ellipsometry
Edit Delete	24	Polarimetry
Edit Delete	25	Time-resolved studies
Edit Delete	26	NEXAFS
Edit Delete	27	EXAFS
Edit Delete	28	UVCD
Edit Delete	29	XMCD
Edit Delete	30	IR Spectroscopy

Actions	id	name
Edit Delete	31	Crystallography (material science)
Edit Delete	32	Crystallography (biological macromolecules)
Edit Delete	33	Powder Diffraction
Edit Delete	34	Surface Diffraction
Edit Delete	35	Topography
Edit Delete	36	X-ray Lithography
Edit Delete	37	EUV Lithography
Edit Delete	38	MOKE spectroscopy
Edit Delete	39	XAS
Edit Delete	40	XES

Experiment type and subtype establish a correlation between MAX-lab / Elettra beamlines

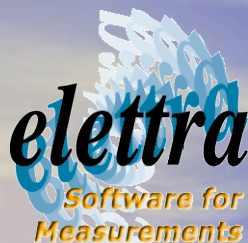
<http://www.elettra.trieste.it/i3/index.php?n=Main.DbMethodes>



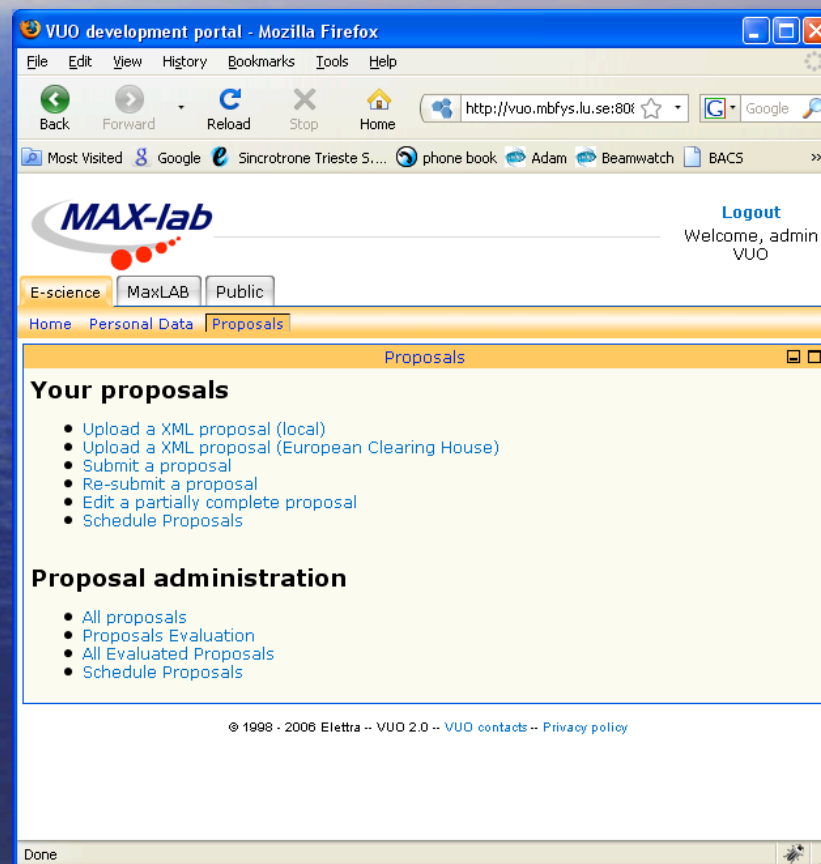
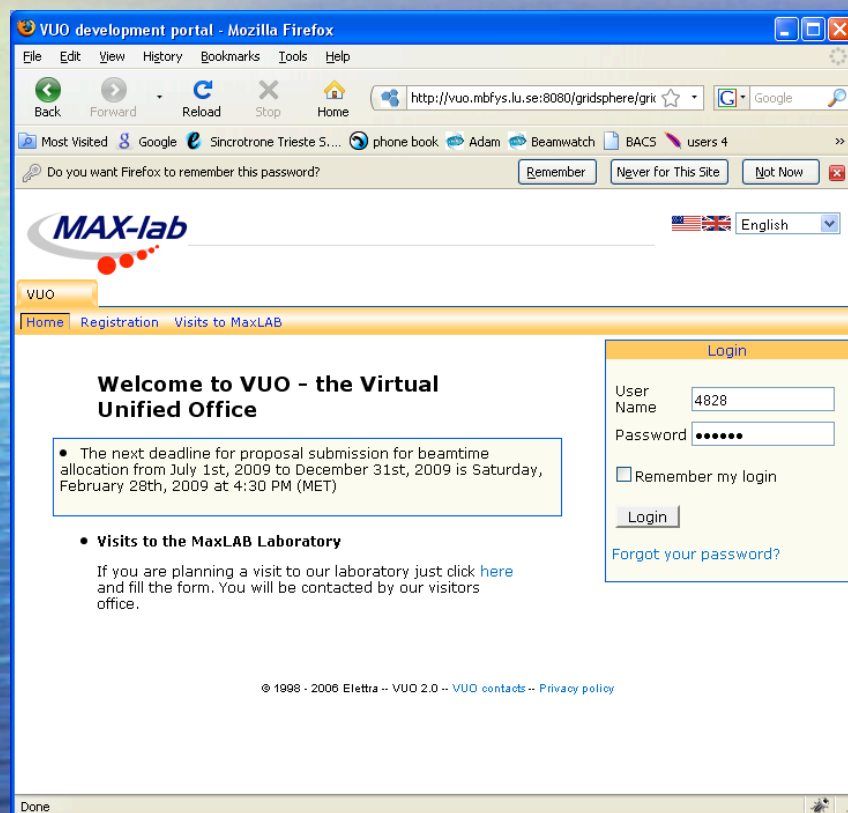
The vision: a Europe-wide clearing house

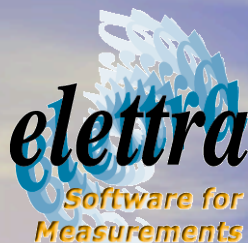
- Create a **delocalised** database of all **facilities and beamlines**
- The user can decide to submit an application to one or more specific laboratories
- The appropriate beamlines are automatically suggested
- Does not presuppose a Europe-wide **user** database





Managing proposals using the OpenVUO





XML download of a proposal previously created using the OpenVUO

The screenshot shows two windows. The left window is a Mozilla Firefox browser displaying the 'VUO development portal'. The right window is a Windows Internet Explorer showing a local XML file.

VUO development portal - Mozilla Firefox

MAX-lab

E-science MaxLAB Public

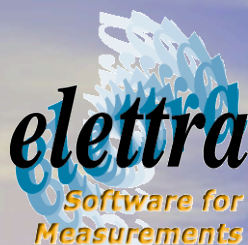
Home Personal Data Proposals

	Proposal id	Title
[Select]	2008011	Test of be
[Select]	2008007	Some mod
[Select]	2008006	Test1
[Select]	2008005	Test1
[Select]	2008003	Test 9/10/
[Select]	2008002	Test prop
[Select]	2008001	Test

© 1998

C:\Documents and Settings\ville\Local Settings\Temp\2008011.xml - Windows Internet Explorer

```
<?xml version="1.0" encoding="UTF-8" ?>
- <proposal xmlns="http://www.open-uo.elettra.org" prev_propid="2008010" propid="2008011">
- <title>
- <![CDATA[ Test of beamline classifications ]]>
- </title>
- <abstract>
- <![CDATA[ To test the VUO and exchange of XML proposals ]]>
- </abstract>
- <attachment mimetype="application/pdf" source="http://localhost:8080/vuo/download....." />
- <measurement-station>
- <facility>
- <![CDATA[ elettra ]]>
- </facility>
- <beamline>
- <![CDATA[ D1011 ]]>
- </beamline>
- <alternative_beamline />
- </measurement-station>
- <proposer>
- <name>
- <![CDATA[ admin ]]>
- </name>
- <family-name>
- <![CDATA[ VUO ]]>
- </family-name>
- <gender>M</gender>
- <birthdate>
- <![CDATA[ 1971-01-01 ]]>
- </birthdate>
- <nationality>FI</nationality>
- <research-type>
```



Submission to the European Clearing House

VUO portal - Mozilla Firefox

https://users3.elettra.trieste.it/gridsphere/gridsphere?cid=proposals&gs_action=showUpload

Synchrotron Light Laboratory

E-science Elettra Public

Home Personal Data Proposals Users Calendar Access Requests Publication Downloads

Proposals

Experiment

[Select] Photoelectron Emission: XPS
 [Select] Photoelectron Emission: UPS
 [Select] Photoelectron Emission: Angular-resolved PES
 [Select] Imaging: THz near-field Microscopy
 [Select] Imaging: IR Microscopy
 [Select] Imaging: X-ray Microscopy
 [Select] Imaging: X-ray Tomography
 [Select] Imaging: X-ray Holography
 [Select] Imaging: Photoemission EM
 [Select] Imaging: Fluorescence Imaging
 [Select] Imaging: Medical Applications
 [Select] Scattering: Elastic Scattering
 [Select] Scattering: Coherent Scattering
 [Select] Scattering: Inelastic Scattering
 [Select] Scattering: Magnetic Scattering
 [Select] Scattering: Nuclear Resonant Scattering
 [Select] Scattering: Small Angle Scattering
 [Select] Scattering: Wide Angle Scattering
 [Select] Scattering: Time-resolved Scattering
 [Select] Emission/Reflection: X-ray Fluorescence (XRF)
 [Select] Emission/Reflection: Reflectometry
 [Select] Emission/Reflection: pXRF
 [Select] Emission/Reflection: Ellipsometry
 [Select] Emission/Reflection: Polarimetry
 [Select] Emission/Reflection: Time-resolved studies
 [Select] Absorption: NEXAFS
 [Select] Absorption: EXAFS
 [Select] Absorption: UVCD
 [Select] Absorption: XMCD
 [Select] Absorption: IR Spectroscopy
 [Select] Absorption: Time-resolved studies
 [Select] Diffraction: Crystallography (material science)
 [Select] Diffraction: Crystallography (biological macromolecules)
 [Select] Diffraction: Powder Diffraction
 [Select] Diffraction: Surface Diffraction
 [Select] Diffraction: Topography
 [Select] Diffraction: Time-resolved studies
 [Select] Lithography: X-ray Lithography
 [Select] Lithography: EUV Lithography

VUO portal - Mozilla Firefox

https://users3.elettra.trieste.it/c

Synchrotron Light Laboratory

E-science Elettra Public

Home Personal Data Proposals Users Calendar Access Requests Publication Downloads

Proposals

Help

Upload XML Proposal

BACH	elettra	[Send]
BEAR	elettra	[Send]
GASPHASE	elettra	[Send]
MATERIALS SCIENCE	elettra	[Send]
SUPERESCA	elettra	[Send]
VUV PHOTOEMISSION	elettra	[Send]
D1011	maxlab	[Send]
I311	maxlab	[Send]
I411	maxlab	[Send]
I511-1	maxlab	[Send]
I511-3	maxlab	[Send]

[Browse...]

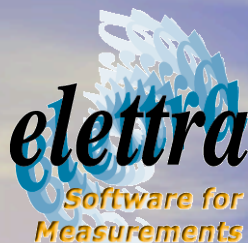
[Cancel]

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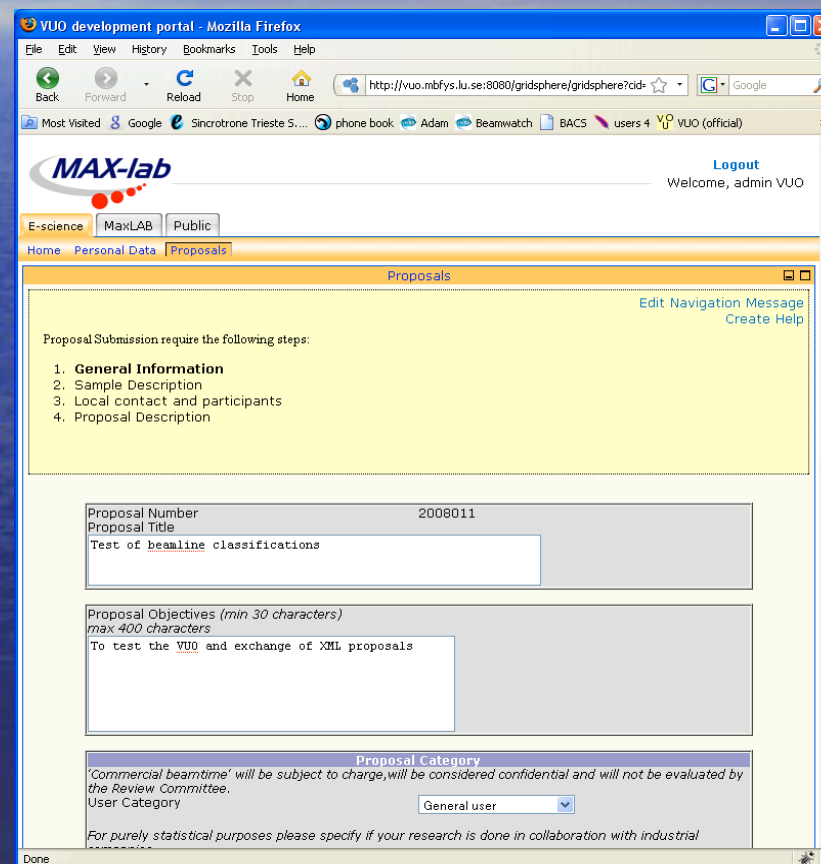
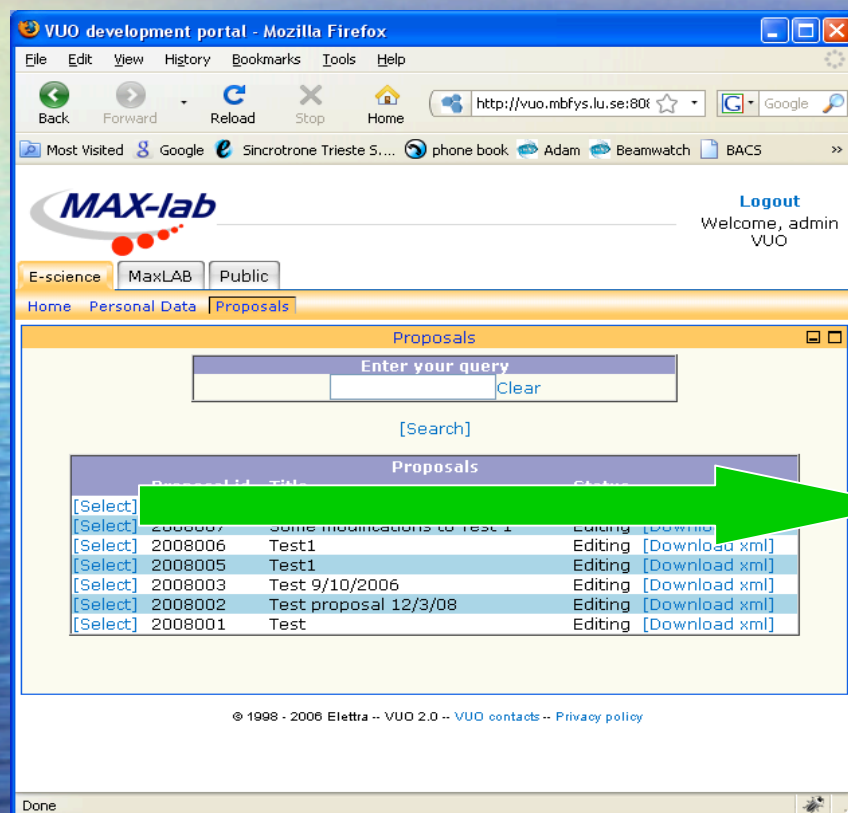
X Find: [] Next Previous Highlight all Match case

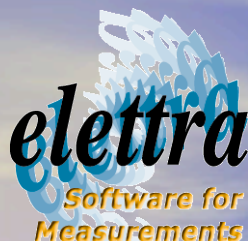
Done

users3.elettra.trieste.it



Clearing facility specifics after remote submission





Conclusion

- It is probably inconceivable that all facilities change their own VUO-like (DUO, SMIS, ...) application to a common system (new or existing)
- We think the right approach is to enable all VUO-like applications to communicate
- We have developed and tested a method based on webservices that allow the user to compile an experiment proposal only once and submit to more facilities
- The IA-SFS project funded the development of OpenVUO that implements all steps of the proposal management and the above mentioned webservices using open source technology.