**Technical aspects**

- JAVA Application
- embedded libraries : JSamp, JFreeChart, XMLBeans
- Deployment : Java webStart, Download
- Tested on Windows, Linux, Mac

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**Abstract**

We developed at CeSAM (Centre de données Astrophysiques de Marseille) from LAM a new Virtual Observatory compliant Exposure Time Calculator. This new ETC has been designed in order to facilitate the integration of new sites, instruments and sources by the user. It is no more instrument dedicated but is based on generic XML data for multi projects implementation (EUCLID, EELTs, OPTIMOS) covering a wide wavelength range (from NIR, to UV).

This poster focus on the spectroscopic aspects of the tool and defines the infrastructure of the application. It also focus on the interoperability of the tool and will show the added value for the end users.

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**ETC-42**

Yet Another Exposure Time Calculator (ETC)

ESA, ESO and other specific Instrument Centers have developed their own ETC in order to provide simulation of instrument performances. Often, ETCs are independent and outputs are different even for the same queries. We compared several ETCs and computation steps (Surace et al., in prep) and defined independent computation steps needed in any ETCs whatever the project is (EUCLID, ISTOS, EELT, ...)

Why another ETC?

Most ETCs are black boxes and it is not possible to include easily some instrument modification and artefacts or sources. We decided to build up an «open» ETC that will be usable by the standard astronomical community and by instrument specialists. This ETC is open enough to include any new site, instrument, target, and operation mode without any coding experience. It is generic enough to be adaptable to any new project.

The Goal.

As any ETC, the goal is to estimate the exposure time needed with respect to source, site, instrument and observations parameters specifications. Signal to noise ratio, total integration time, observation time specifications, noise components, signal outputs are the standard outputs of the ETC.

A bit of history

Developed initially for SNAP in IDL command line (M.H. Aumenier), ported as widget IDL program (M.H. Aumenier, P.Y. Chabaud), it has been ported as a generic JAVA applet/standalone product (CeSAM team)

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**Conclusion and perspectives**

- Development
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**References & Special thanks**

This work has been performed thanks to M.H. Aumenier, V. Renault, L. Bouguerra, S. Peze, B. Epinat, B. Meneux and several scientists. S. Basa, D. Burgarella, J.G. Cuby, A Ealeb, O. Lefevre, B. Milliard. 

JFREECHART : [http://www.free.org/jfreechart/](http://www.free.org/jfreechart/)
ETC- ESO : [http://www.eso.org/observing/etc](http://www.eso.org/observing/etc)
ETC NOAO-IRAF : [http://www.noao.edu/gateway/ectime/](http://www.noao.edu/gateway/ectime/)
WPCF2 : [http://www.stsci.edu/hst/wpcf2/software/wpcf2-etc.html](http://www.stsci.edu/hst/wpcf2/software/wpcf2-etc.html)
VISTA : [http://www.ast.cam.ac.uk/vdifs/etc](http://www.ast.cam.ac.uk/vdifs/etc)

ETC-42 : The ultimate answer - Life Universe and Everything - H2G2 - D. Adams

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