Auditable invoicing of audited rates: a methodology for funding of an academic platform operations

Hugues Granier – Monique Dilhan
LAAS-CNRS, Université de Toulouse, CNRS, Toulouse, France

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Outlines

LAAS-CNRS
- Lab key figures
- Micro technologies platform
  - Key figures
  - Financial issues
  - Operation costs

Audited rates
- Full costs methodology
- How to define the rates

Auditable invoicing
- Methodology
- Additional elements

The least and most
- Constraints
- Advantages
- Pending situation
LAAS-CNRS Toulouse (France) : key figures

- Laboratory for analysis and architecture of systems
  - Offices and experimentation 22 000 m²
  - Personnel : 592
    - Research : 208
    - Technical administrative support : 102
    - PHD - Post doc : 226
    - Others Temporary : 56
  - 50+ PhD thesis defended /year

- 8 Scientific departments
- 4 Main applicative axis

- 4 Technological platforms
  - Robots
  - Design
  - Micro and nano fabrication
  - Characterization

https://www.laas.fr/public/en
Micro and nanotechnologies platform: key figures

Open academic platform for micro- and nanotechnology-related projects

- **1600m² clean room**
- **300+ registered users**
  - 180-200 entering the platform
- **150 projects/year (half exogenous)**
- **35M€ equipment**
  - [https://lims.laas.fr/Default.aspx](https://lims.laas.fr/Default.aspx)
  - 29,000 booking hours average
- **Managed by TEAM technical staff**
  - 31 engineers, technicians
  - Contact: renatech@laas.fr
- **Member of French Renatech Network**
  - [https://www.renatech.org/en/](https://www.renatech.org/en/)
- **Apply for your project**
  - [https://www.renatech.org/projet/index/en](https://www.renatech.org/projet/index/en)

- **7300 m² of clean rooms**
- **140 clean room engineers and technicians**
- **130 M€ of EQUIPEMENT**
Micro and nanotechnologies platform: financial issues

- **Operation costs**
  - 1,45 M€/year
    - Consummable and raw materials
    - Maintenance
    - Infrastructure

- **Investment costs**
  - 1,3 M€/year over the last 15 years
  - Renatech equipment funding program
  - Internal research projects funding
  - Invoices to industrial exogenous projects

- **Staff costs**
  - 2,5 M€/year
  - CNRS + Toulouse Federal University
  - LAAS own resources
Operation costs: the equation to solve

- Recovering the operation costs is the minimum to ensure the durability of the platform's operations (as long as wages are insured by the guardianship)

- Part of resources from project funding
  - National agencies,
  - Region,
  - Europe,
  - Direct contracts with industry

- Half the projects exogenous
  - Academics / industrials
  - French / foreign

- Meeting funding rules of different funding agreements
  - Not eligible items depending the funding source
  - Ex: H2020 grant agreement
    - Infrastructure Indirect costs not clearly eligible even with argued allocation keys, while they are by french national research agency

Need for a unique, understandable and auditable methodology
Defining the catalog of available operations

- Platform experts define the operations and their unit of work
  - Ex: 1 booking hour on projection lithography stepper
- Ability to track these units of work
  - Ex: booking hours on LAAS Myfab application

Tracking all expenses related to the platform in an auditable way

- Financial accounts dedicated to the platform in the financial system

Calculating the full cost of each operation by making an auditable link between expenses and operations
Full cost, the basis for audited rates: the items

Full cost is the sum of 5 items

- **Consummable and raw materials**
  - Ex: substrates, metals, resists, chemicals, etc.

- **Maintenance**
  - Spare parts and technical support

- **Depreciation charges of equipment**
  - In accordance with the financial rules.
  - Ex: in CNRS depending the equipment price it is 5 or 10 years

- **Staff directly attached to the realization of the operation**
  - Ex: during 1 hour Ebeam only ½ hour of the expert engineer needed

- **Infrastructure**
  - Direct and indirect (if argued allocation keys) costs for platform operation
  - Ex: contract for air treatment control, cleaning, outfits, etc…
Audited rates: how to define them?

- Full cost is declined in different rates, depending on the “customer” of the platform

  - As many rates as “customer” typology

  - Ex1: For French academics funded by national agency you must remove technical staff (funded by CNRS) and depreciation (funded by governmental programs)

  - Ex2: For industrials
    - If service delivery the rate is full cost (to avoid unfair competition)
    - If scientific/technical collaboration the rate is full cost but you can make a discount of the number of operations because you develop your know how

A specialized service/company audits and validates the full cost and rates, which may possibly be published
Using the booking application it is possible to **calculate the process cost considering the correct rate**.

All this process can be audited by the funding organism, and it’s the same either for internal project or exogenous ones.
Additional elements

> Full cost / rates calculation **completed with an argued report**
  - The lab / the platform organization
  - The customers typologies
  - A benchmarking of similar structures and their rates
  - A multi-year forecast budget
  - The operations
  - Human resources to run the platform

> **Update**
  - Not every year but
  - regularly and/or when large changes in costs/rates

> **It can be added in the rates, management fees and profit margin**
  - In adequate rates typologies
  - Ex : both in service rates for industrials
Constraints

> Traceability/auditability of all actions related to projects
  - Operations

> Calculation methodology
  - Heavy to set up the first year because very documented record to provide
  - Calls for continuous and rigorous monitoring

> Anticipation
  - Ability to establish annual multi-year forecast budgets to calculate smoothed costs over several years

> Unique model presented to funders and customers (mid / long term)
  - The CNRS will not develop several models so if other platforms want to be eligible it will have to "melt" in this operation mode.
Advantages

> **Traceability/auditability of all actions related to projects**
  - Funding operators love this procedure
  - Ex: some of them solicit the platform to answer project calls because it’s able to meet the justification expectations

> **Calculation methodology**
  - Allows to know the real costs of the platform in the operation of the laboratory
  - Allows to clearly identify large expenditure items and thus define "policies" to reduce costs, keeping the projects same level of support

> **Anticipation**
  - Helps reduce periods of financial tension because it is better to anticipate large expenses

> **Unique model presented to funders and customers**
  - Very understandable by the funders due to budget items
  - Rates displayed according to the professional origin: transparency towards all users.
Advantages

> **Ease in financial management of the platform**
  - Simpliest considering french financial procedures
  - Real time monitoring of operating funds

> **Ease in financial management of research contracts**
  - Possible exact simulation of technological costs
  - Real time monitoring of available funds
  - Eligibility for justification

> **Possible mutualization in or between research entities**
  - However necessary consistency between the contents of the invoice and the support contract.

> **Contracts justifications**
  - Quasi global eligibility
Pending situation: H2020 internal invoicing

> Grant agreements talk about full costs eligibility but not so evident for some items
  - Indirect infrastructure costs even if argued
  - Technical staff implication (the ones not on time sheets)

> And not possible having a specific Europe rate considering these limitations

> The solution?
  1. Displaying only one rate (full costs) and mentioning it is declined according to eligible items
  2. A rate “European compatible” and also applied to others customers (but it must be an existing customer typology)
Summary

> Auditable invoicing of audited rates offers a very more “fluid” operation costs monitoring.

> Only pending situation for eligibility : some internal european fundings.

> Very pleased to discuss the different models over the countries

> For an update a benchmarking is necessary. If you agree to participate we could share the results.
Thank you for your attention

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granier@laas.fr
+33 5 61 33 64 34

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renatech@laas.fr