



Research infrastructure costs: From indirect to direct costs?

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Per Inge Andresen, Senior adviser
NTNU – Norwegian University of Science and Technology



- What is a research infrastructure?
- Typical costs components
- LRIs – Large Research Infrastructures
- What about SMRIs – Small and Medium-sized Research Infrastructures?
- National SMRI models
- The outlook for SMRIs in H2020
- Transnational access costs
- Discussion



What is a research infrastructure?

- A physical environment designed and operated in order to facilitate research
- Typical examples:
 - Labs
 - Workshop facilities (for construction of test rigs, etc.)
 - Large instruments



Typical costs components

- Staff (technicians, operators, administrators)
- Equipment
- Consumables, raw materials, parts, components
- Real estate/ housing costs
- Electric power, water
- Maintenance, cleaning services, security services

LRIs – Large Research Infrastructures

- A unique model for H2020, defined by the EC
- Response to objections from stakeholders to the removal of the real indirect cost option
- High threshold – applicable to the sum of all LRIs for each beneficiary:
 - Historical purchase costs > €20 mill.
 - Value of LRIs > 75% of the beneficiary's total fixed assets



What is an LRI?

- A facility, resource or service used for research
 - it may be used beyond research
- It may be ‘single-sited’, ‘virtual’ or ‘distributed’
- Examples:
 - major scientific equipment (or sets of instruments)
 - knowledge-based resources such as collections, archives or scientific data
 - e-infrastructures, such as data, and computing systems, and communication networks



LRI preconditions / requirements

- Cost/value threshold
 - € 20 Mill. historical costs and 75% of fixed assets
- Approval before use («Ex-ante assessment»)
 1. Status validation (Step 1)
 2. Methodology compliance (Step 2)
- Costs must be identifiable and verifiable
- Costs must be incurred in direct relationship with the research infrastructure and with the action
- Costs must not be included as direct costs in any other category
- Costs must be directly measured



LRI cost categories

- Capitalised costs
- Operating costs



LRI: Capitalised costs

- All costs incurred in setting up and/or renewing the research infrastructure
- Some costs of specific repair and maintenance of the research infrastructure and parts or essential integral components
 - See IAS 16 (International Financial Reporting Standard) on Property, Plant and Equipment
- The costs of renting and/or leasing (excluding any finance fee/interest) of a research infrastructure may also be declared



LRI: Operating costs

- Preconditions/requirements
 - specifically for running the research infrastructure
 - directly linked to the research infrastructure



Eligible LRI operating costs

- personnel costs of administrative and support staff directly assigned to the functioning of the research infrastructure;
- rental/lease of the research infrastructure (for the period of its actual use for the action);
- maintenance and repair contracts (including calibrating and testing) specifically awarded for the functioning of the research infrastructure;
- consumables, materials and spare parts specifically used for the research infrastructure;
- facility management contracts including security fees, insurance costs, quality control and certification, upgrading to national and/or EU quality, safety or security standards (if not capitalised), specifically awarded for the functioning of the research infrastructure;
- energy and water specifically supplied for the research infrastructure.



Non-eligible LRI operating costs

- rental, lease or depreciation of buildings or plants not directly used for the action
 - e.g. administrative buildings, headquarters
- statutory audit and legal fees
 - not including costs of certificates required under the GA
- office supplies and petty office equipment (purchased in bulk)
- other general services
 - i.e. items recorded by the beneficiary under the same account in the general ledger
- management tasks and horizontal services
- non-specific, non-activity-related or non-project-related costs
 - i.e. items recorded by the beneficiary under the same account in the general ledger



LRI costing

- Composite unit costs
- Cost per unit of use:

$$\frac{\{\text{All capitalised costs of the research infrastructure}\} + \{\text{All operating costs of the research infrastructure}\}}{\text{Total annual capacity}}$$

- Unit of use (must be supported by evidence):
 - a) the time of use (hours, days or months), or:
 - b) the number of accesses
- Direct costs that can be claimed:

$$\{\text{Actual eligible costs per unit of use}\} \times \{\text{Actual number of units of use used on the action}\}$$



LRIs – few and far between

- High threshold (€ 20 Mill. , 75% of fixed assets)
- Strict requirements
- Costly to establish
- Costly to maintain
- Very few approved so far



What are the alternatives to LRIs?

- a) SMRIs – Small and Medium-sized Research Infrastructures?
 - «LRI Light»
 - Scaled down
 - Simplified
 - Unit costs for smaller infrastructures
- b) Breaking down unit costs into underlying components
- c) Direct measurement of each cost component



A national SMRI model: The Norwegian RIR Model

- RIR: Research Infrastructure Resource
- Size flexibility
 - No upper or lower formal limit on size
 - May consist of one or many labs, instruments, etc.
- Allocation of costs based on use
 - Per hour/day/week
 - Per unit of service/analysis
 - Per sample



RIR cost components

- Housing costs
 - rental and building related costs for research space such as laboratories and workshops
- Scientific equipment
 - Depreciation costs
- Common operating consumables and service/maintenance contracts, i.e. shared costs for all users
- Technical support
 - Personnel costs for the technical support staff needed to sustain the operational infrastructure.
 - Does not include assistance in the execution of research activities
 - Includes indirect costs



RIR: Capacity

- Based on planned/intended use
 - the number of user hours a RIR is generally designated for in a normal operating phase
- Excluding time for maintenance, calibration, testing, upgrading, etc.
- May include idle (available, but unused) time



RIR: Documentation basis of charging to projects

- Two options:
 - Logs (time recording)
 - Logged use of the infrastructure
 - Agreed purchase of capacity based on estimated need
 - For labs and other infrastructure where scientists often come and go for short periods of time as needed

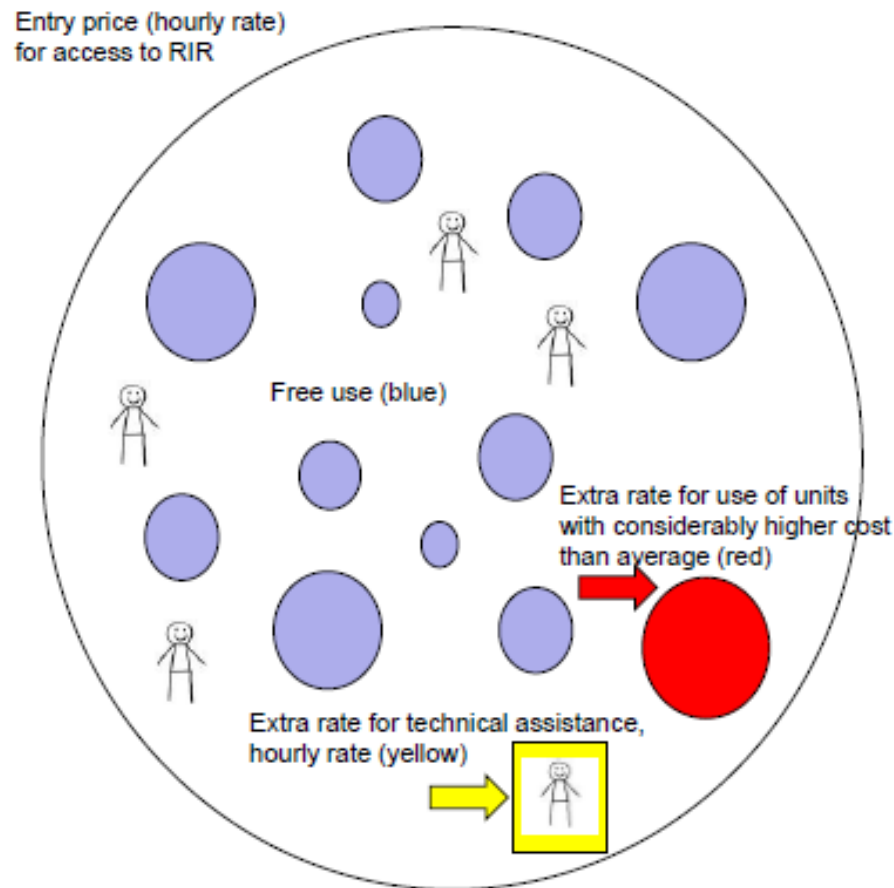


RIR: Two-layered pricing

- Base rate
 - A fixed entry price which provides access to most of the RIR
- Additional prices
 - for particularly expensive equipment/components and/or technical services which are only used in some cases
 - for technical assistance in the execution of research activities



RIR: The amusement park model





NanoLabNL: A Dutch model

Source: Dennis van Doorn, TU Delft

- Dutch national consortium of 4 NanoLabs
- For Dutch funding opportunities:
 - Applicable cost categories identified for each source
- For FP7 and H2020:
 - Same cost categories, except:
 - VAT (non-reimbursable VAT now eligible under H2020)
 - Housing costs
 - Energy and water are eligible for Trans-national Access costs

NanoLabNL – Cost categories

- Staff
 - salary, external hire and education,
- Housing costs
 - rent, security, cleaning, energy, water, maintenance
- Equipment
 - investment/ depreciation, maintenance contract, repairs
- Consumables
 - gasses, materials, wafers



The outlook for SMRIs in H2020

- No apparent opening for unit costing of smaller research infrastructures
- At the moment LRIs seems to be as far as the European Commission is prepared to go

Breaking down unit costs into underlying components

Idea being explored in Norway:

1. Identify all relevant costs
2. Determine capacity
3. Calculate unit cost
4. Document use per project
5. Charge x number of units of the underlying cost components to the project

This has yet not been tested, and no EU approval has been requested yet



Direct measurement of each cost component

1. Measure and log the use of as many cost items as practically possible for each research activity (project)
2. To the extent possible, purchase consumables individually for each project
3. Charge these costs as direct cost to the project



Direct component measurement vs. unit costs

- The safest way
 - Direct component measurement?
- Which is more time-consuming and costly to establish?
 - LRI?
- Which is more time-consuming and costly to operate?
 - Direct component measurement?
- Which is the least practical?
 - Direct component measurement?



Transnational access costs

- Costs per unit of access (hour/day/week)
- Includes operating costs only
- Does not include depreciation
- May include costs for water and energy consumption
 - If measured directly



Discussion

- Any LRI candidates?
- Any SMRI examples?
- Any comments to any of the models?
- Suggestions for alternative approaches?
- Exchange of experiences?
- Should unit costs for smaller infrastructures be accepted for H2020?
- Is direct measurement and allocation of research infrastructure costs the only option?