

JRC Strategic evaluation of the Bulgarian Centres of Competence and Centres of Excellence and recommendations for their further development

Report presentation event directed to Bulgarian stakeholders
Virtual, 14.01.2021

Elena Andonova, JRC
Stoyan Kaymaktchiyski, JRC
Carlo Rizzuto, independent expert
Paris Kokorotsikos, independent expert



Background and timeline of the strategic evaluation action

- Considering the report JRC has delivered on reshaping Sofia Tech Park (2017-2018), the Managing Authority - Executive Agency „Science and Education for Smart Growth“ approached JRC through DG REGIO with a request for conducting an evaluation of the 14 ERDF co-funded Centres
- JRC and DG REGIO concluded an Administrative Agreement where the methodology and objectives of the project were described
- In late 2019 JRC selected independent experts and organised them into a team
- JRC conducted three field visits in Bulgaria to meet the Centres' teams and other stakeholders in the period of 2019-2020
- In 2020 the experts, along the JRC produced a report with general and Centre specific recommendations

Objectives of the action

- Provide a strategic evaluation of the plans, structure and activities of 14 Centres of Excellence and Centres of Competence launched by the Bulgarian government under the "Science and Education for Smart Growth" Operational Programme.
- The strategic evaluation encompassed the following areas:
 - Legal and Organisational Framework of the Centers
 - State Aid rules, Research infrastructures, Sustainability matters
 - Technology Transfer and Commercialisation, Collaboration with industry/ private sector, synergies with complementary initiatives
- The ultimate objective was to analyse the status quo, plans and strategies of all CoCs and CoEs and produce recommendations for the future development of each one of the Centres

Structure and content of each of the 14 centre-specific analysis

follows broadly the same or similar pattern, namely:

- Summary of the Centre, partner organisations and current status
- Review of Centre's responses to the questionnaire
- Long-term vision of the Centre
- Legal framework
- Organisational and governance framework
- Research Infrastructure
- State Aid rules explanation
- Technology Transfer and commercialisation
- Sustainability of the Centre and its future operations
- Roadmap for long-term support

Approach and methodology



Documents review, evidence and opinion gathering, questionnaires

Materials and Sources:

- ✓ Full Project Documentation (shared by the Managing Authority)
 - ✓ Proposal, Justification, Partnership agreements, IPRs policies, Rules, Access to infrastructure and other relevant agreements
 - ✓ Financial plans, costs and expenditures
 - ✓ Plan for relations with business and plans for commercialization
- ✓ Presentations from September and November 2019 and from February 2020
- ✓ Responses to a Questionnaire
- ✓ Personal meetings and visits: September and November 2019 and February 2020
- ✓ National public registries, national and EU legislation
- ✓ Documents and sources that have been considered necessary or useful, duly referenced.

General findings and recommendations

To the government

- **Optimise public intervention** in the R&D&I sector in Bulgaria
- Newly established State Agency for Research and Innovation to implement a centralised, strategic and well-coordinated government policy directed strongly towards
 - Capacity building
 - Measures to support academia-industry collaboration incl. **“effective collaboration” projects**
- **Targeted funding by Ministry of Science** to realise specific scientific objectives, agreed with rectors to encourage collaborations with industry and parallel technology transfer activities
- **Design specific stimuli such as funding for Proof of Concept and for spin-off creation** to incentivise the commercialisation
- **Joint Innovation Centre at BAS**, in association with the individual teams at the BAS institutes, **should be strengthened and serve as a central hub facilitating the participation in the various CoE and CoC projects**

1. Legal framework: two broad options/models for competences

Less integrated model (incl. federalized)	More integrated model
<p>particular activities are entrusted to “facilitators”: professional independent teams such as coordination, representation and promotion of industry collaboration</p>	<p>“fully integrated governance structures” where a Centre becomes an even more integrated and empowered organisational structure capable of managing the research infrastructure and setting the research agenda</p>
<p>A parallel “coordination” body supports particular activities of the partner organisations, including in particular joint project application and participation.</p>	<p>autonomous structure with its own integrated management structure, scientists and its own staff.</p>
<p>This model would be suitable in the start-up phase and for Centres which benefit from some degree of integration but where the partner organisations prefer to preserve their competences over the research infrastructure and for Centres which have already opted for a federalised structure as the most suitable one (e.g. the National Centre of Excellence in Mechatronics and Clean Technologies with its 17 partners).</p>	<p>For Centres in which the work packages as well as the research infrastructure across the partner organisation and its usage are fully interlinked and dependent upon each other thus requiring a deeper integration in decision-making (e.g. CoC Sustainable Utilisation of Bio-resources and CoC Clean and Circle).</p>

Recommendations to the Centres and the founding partner research organisations

1. Legal framework

- The Centres have initially been established as contractual partnerships => a **flexible initial set-up** provides possibilities to opt for **different legal structure** and incorporate dedicated entities with own, separate legal personality
- Almost all Centres (13 out of 14) will, in the full operation phase, **clearly benefit from the creation of separate legal entities**, with a degree of autonomy, entrusted with the development of the common interest of the partner organisations within the Centre-projects.
 - In the period after 2023, the Centres should establish a clear institutional setup, on a more permanent basis, with professional management and staff with clear roles and responsibilities
- The partners of the Centres should thus consider **establishing Non-profit Organisations / Associations / Foundations** with a varying degree of competence entrusted to the separate legal entity – the autonomous organisational unit

Recommendations to the Centres and the founding partner research organisations

1. Legal framework (cont.)

To design autonomous legal and organisational entities will facilitate a framework:

- ✓ to streamline the effective fulfilment of the five-year (2024-2028) obligation minimum period;
 - ✓ but also to provide a clear and longer-term sustainable institutional setup
- The legal entity and competences granted to that entity should **correspond to the needs** of each Centre.
 - For most Centres, an **association type of a not-for-profit entity is recommended**
 - For one Centre (Hitmobil CoC), a foundation is recommended due to sustainability factors and high share of funding going to private beneficiary organisations
 - The medical universities and healthcare-related Centres deserve special attention due to the nature of their activities and already existing structures/units
 - The CoE Informatics, Information, and Communication Technologies does not appear to benefit from the creation of entity or structure with separate legal personality, it should integrate into the lead partner
 - Under Horizon Europe proposal: *Coordination and support actions may be implemented by one or more legal entities*

Recommendations to the Centres and the founding partner research organisations

1. Legal framework (cont.)

Public research institutes /university institutes are organisational structures with

- external recognition and
- internal organisational independence

University institutes are considered by Bulgarian stakeholders to bring certain benefits, incl. in respect to collaboration with industry. The creation of institutes could

- ✓ help **universities integrate and consolidate their R&D activities** and thus participate more effectively in some of the Centres.

Institutes could be relevant for Centres in which one organisation (e.g. a university) participates with several of its faculties requiring the pooling of human, scientific and technical resources

Legal arrangements: IPR sharing in consortia of partners

Table 5. IPR sharing in consortia of partners under the Horizon Europe proposal

Horizon Europe (Proposal, COM/2018/435 final)	Ownership of research results: Beneficiaries own the research results they generate. Two or more beneficiaries shall own results jointly if they have jointly generated them and it is not possible to either establish the respective contribution of each beneficiary or to separate them when applying for, obtaining or maintaining their protection. The joint owners shall agree on the allocation and terms of exercise of their joint ownership and normally licensing to third parties can be done by each owner while the other owners receive a fair compensation.
--	---

The majority of the Centres already utilise a similar approach – based on a “Protocol of contribution” signed by the partners

However, several Centres agreed that the Centre will own all results even though the Centre does not exist (yet) as an entity with own legal personality

Recommendations:

2. Effective Management of Research Infrastructure

- Managed as “infrastructures”, meaning that the ownership must be willing and organised to allow and support their **access and use for users coming from the outside** of the owner institution.
 - Develop and enhance functions to attract and support access of users, both scientific and commercial
- Access rules and costs should be **user-oriented** and as a guiding principle full cost and quality based
- Application documentation and relevant vademecum for applicants that wish to use the facilities
- The possibility of direct contact and exchange with dedicated staff helping to define specific requirements, and possibility of “quality” or “training” supported “free” access, as well as “remote” access (e.g. due to COVID).
- Elaborate an **availability and utilisation plan** connecting several Centres organised in groups of Centres active in similar or complementary thematic areas
- Facilitate synergies between research infrastructures - **cluster research infrastructures according to a set of uniqueness, commonality, and method of operation criteria**
- The clustered RIs to be accompanied by an availability platform and access rules

Recommendations:

3. Organisational Framework and Management

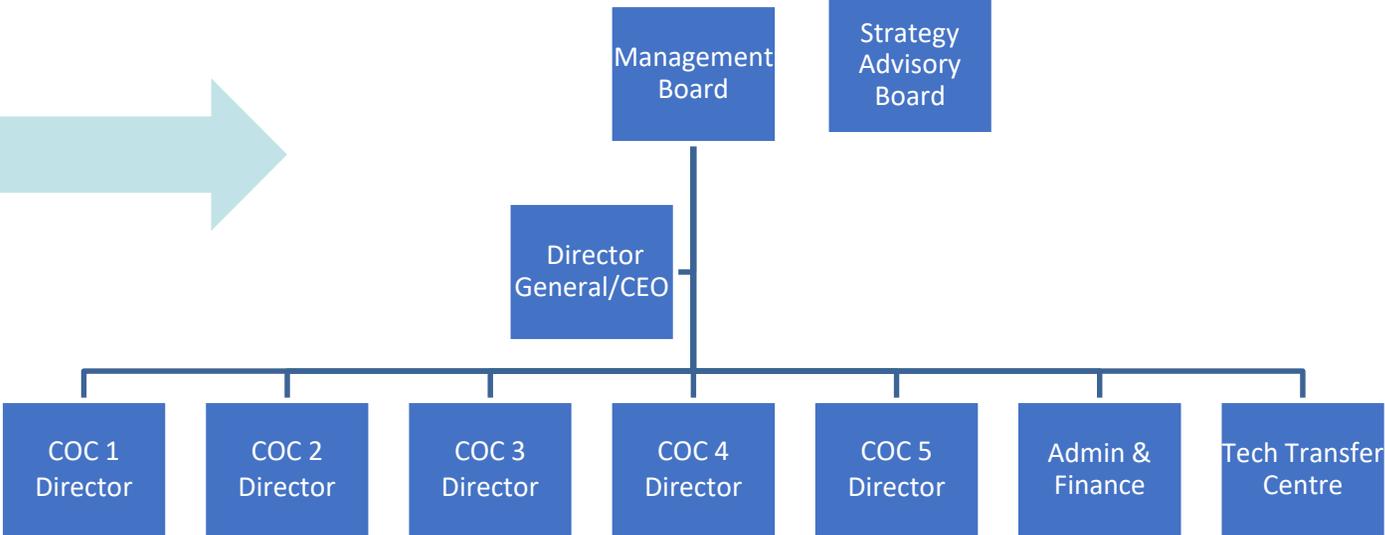
- Activities should be grouped around thematic specialisations each with a manager (**Component Leader** and subject matter expert)
- The **Director** of the Centre, a dedicated leader with **both business understanding and scientific knowledge**, would manage the Centre and be accountable for its successful operation
- After 2023 **less layers of management** and reporting and be essentially focused on R&D&I activities
- Management to drive a healthy and competitive in-house research programme and to provide support for scientific access and use by external researchers as well as maintain stable collaborations with industry (double head).
- Professional manager with a high degree of **autonomy** from the partner research organisations, who can be held **accountable** for actions and results.

Recommendations:

3. Organisational Framework and Management

Compare: until 2023:
Project implementation period

after 2023:
"sustainable operation period"



Recommendations:

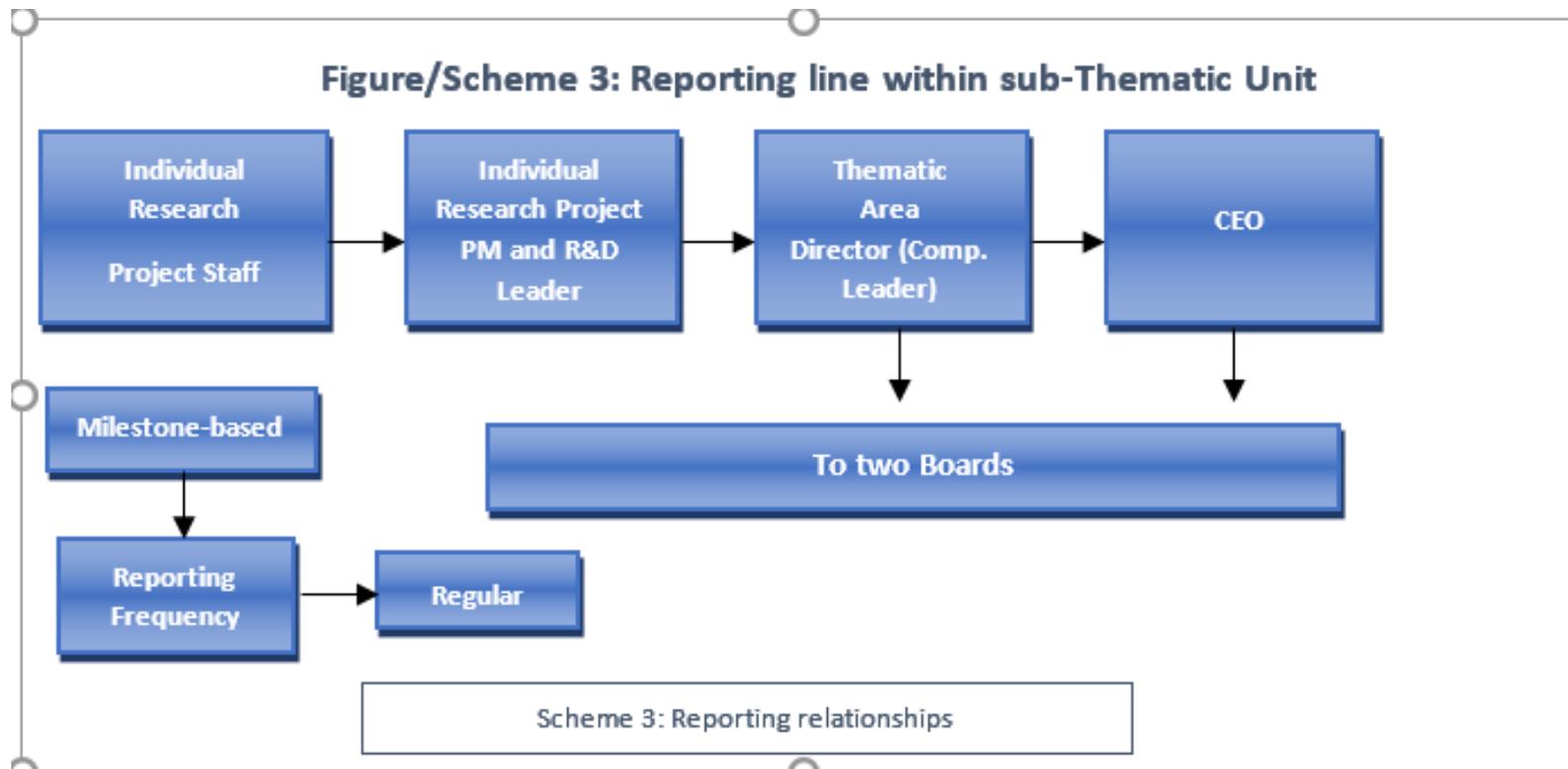
3. Organisational Framework and Management: considerations

- Key role of Component Leaders and of the Director General /CEO
- CEO/Director General of the Centre should be a single full-time leader with a broad mandate needed to achieve ambitious goals
- A structure with less layers of management and reporting is proposed for the post implementation period (after the project officially is completed) resembling most of the European Research Institutes management structures
- Build strong administrative capacity as well as project application and management potential (R&D project management) to utilize as much as possible the installed research infrastructure

Recommendations:

3. Organisational Framework and Management: considerations

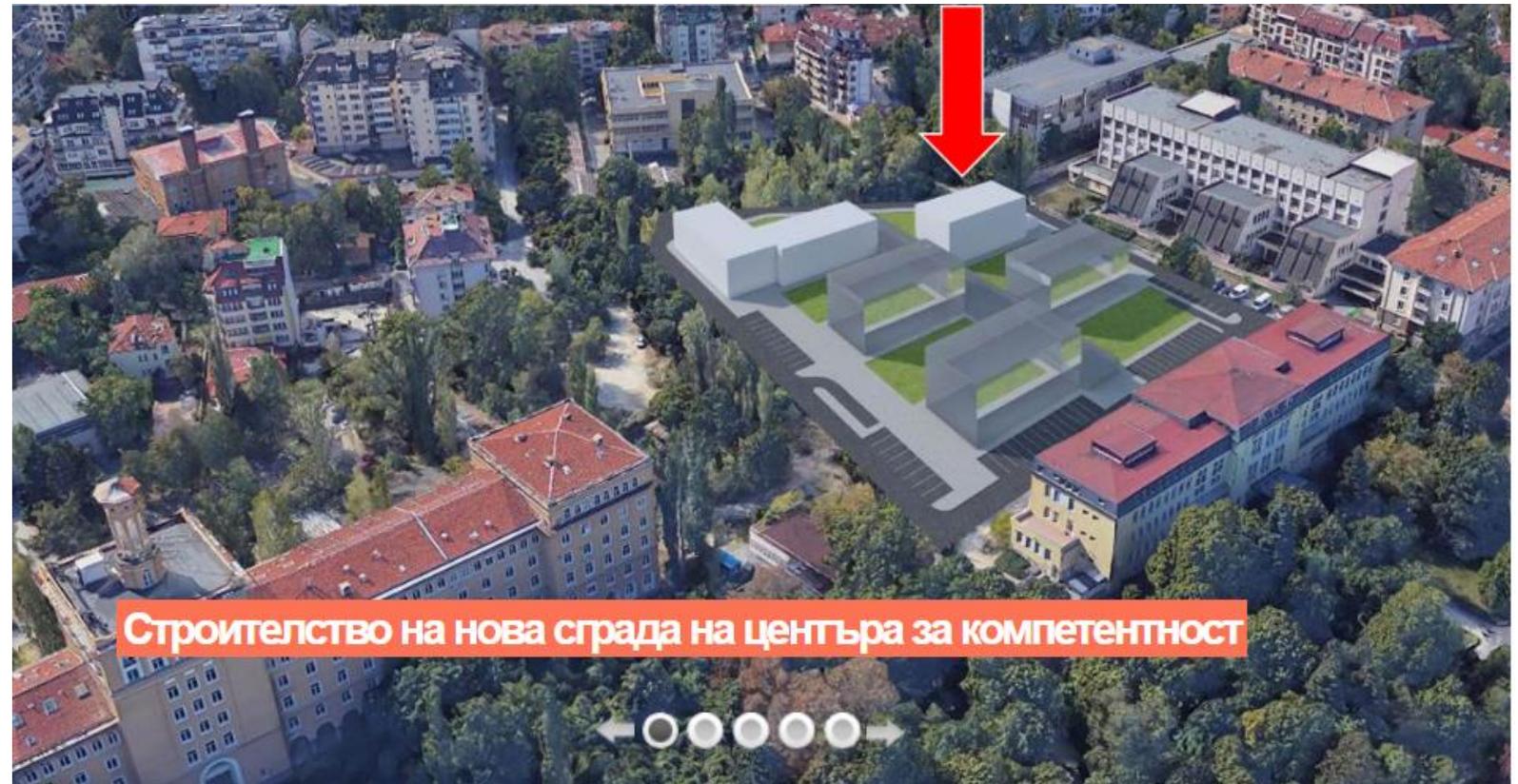
- An integrated organizational, accountability and reporting structure



Recommendations:

3. Organisation - new buildings for several Centres – implications

- The establishment of new buildings that concentrate the RDI activities has **implications on the organisational and legal form consisting in the need to form specific rules for the common use and management of the activities in those buildings**, which could eventually be able to attain a degree of integration, based, among others, on the common co-location.



- Campus Lozenetz; Campus Studentski
- Centres: UNITE, Clean & Circle, TU Sofia in NCMCT, TU Gabrovo, Hitmobil

Recommendations

3. Organisational Framework: Business plans

Centres must **develop a Business Plan for the 3-5 year post-implementation period** and a vision and strategy for the 10 years following implementation.

The **business plan should:**

- Identify the opportunities of the market, national and international business partners, and national and international R&D support programmes;
- identify international collaborators for R&D and technology development;
- detail the organisational and governance reporting structures;
- analyse the mix of income sources and their evolution whilst the centre matures, and;
- present a detailed roadmap towards institutional, scientific, and financial sustainability.

Recommendations:

4. Build capacity in Technology Transfer and strengthen collaboration with industry

- Strengthen capacities in Technology Transfer in each Centre
 - Technology Transfer manager in each Centre
 - Promotion of Internal process and documentation for the identification and commercialisation of promising research results
 - Framework for efficient coordination of TT activities between the Centre and partner institutions' TTOs
- Strengthen the academia - industry collaboration
 - Strive for transparency in the relations with industry, adapt a win-win approach
 - Build experience in negotiating and structuring more complex and longer-term joint activities with industry including of the type "effective collaboration".

Recommendations:

4. Build capacity in Technology Transfer and strengthen collaboration with industry

- Strengthen capacities in Technology Transfer in the Country
 - Consider setting up a national Proof of Concept facility to promote prototyping and patenting activities
 - Promote investor-readiness programmes that target the commercialisation of research inventions
 - Strengthen the entrepreneurial environment in Bulgaria by providing resources, know-how and opportunities 'to connect'

Recommendations:

5. Build an understanding of EU State Aid rules and apply them correctly

Challenges experienced in several Member States include:

How to apply the concepts and principles of State Aid rules in R&I?

- How to differentiate economic vs. non-economic activities?
- How to measure/calculate and monitor capacity usage of the infrastructure?
- How to negotiate collaborations with industry?
- How to utilize full potential of RI while remaining compliant with the rules?

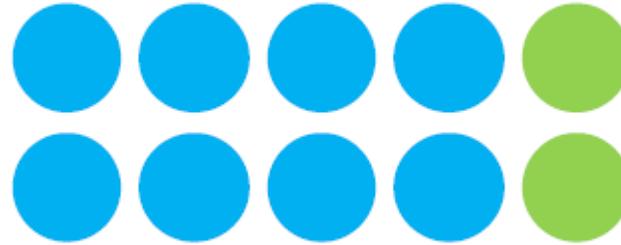
5. Build an understanding of EU State Aid rules and apply them correctly

Looked into every single Centre, provided specific feedback

- **Misunderstandings in Bulgarian research organisations:**
 - Substitution of “non economic activity” with “not-for-profit activity”,
 - Wrong classification of economic and non-economic activities;
 - Belief that industry collaboration is somehow impeded by state aid rules
 - Separation of accounts not widely practiced (yet) or in process of implementation
 - Planned not to conduct any economic activities until end of the project (2023..)
 - More specific: how to identify “relevant entity” in measuring capacity usage?
 - Not sure how to formulate an appropriate price/ fees

Activities of research organisations

Non-Economic



Economic

Includes:

- Independent research
- Wide dissemination of research results through e.g. teaching or publications
- “Effective collaboration” activities (requirements apply)
- Knowledge transfer activities (conditions apply and only as regards the capacity usage)



Includes:

- Research on behalf of undertakings (incl. contract research and research services)
- Renting out of research infrastructure to economic operators
- Selling products/services



Recommendations:

5. Build an understanding of EU State Aid rules and apply them correctly

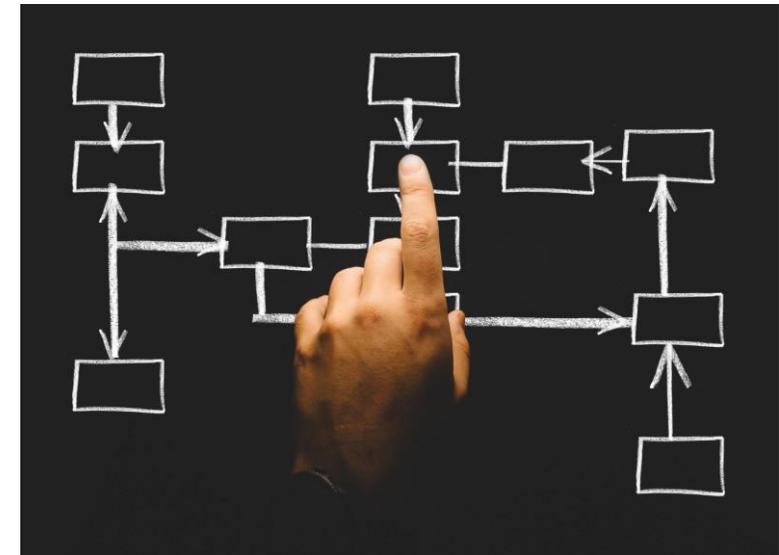
- Build essential **knowledge** and **internal** capacity in understanding and correctly applying EU State Aid rules
 - Rules are applicable to “research and knowledge dissemination organisations”
- Needed also when negotiating and structuring various relations with industry clients and industry partners.
 - Balance income, utilization of research infrastructure, preservation of IPR created, think also long-term
- Even where the economic activities are and remain purely ancillary, separate accounting is mandatory
 - Otherwise risk that all funding received by the Centre will fall under State aid rules

JRC CCTT Study (Q4 2020) on:

State Aid Rules in Research, Development and Innovation: Addressing Knowledge and Awareness Gaps among Research and Knowledge Dissemination Organisations. Decision Tree

**Comprehensive
Decision Tree
for various situations (!)**

- Directed towards practitioners in research organisations (universities, TTOs, research infrastructure managers, etc.)
- Explaining the **practical application** of EU State Aid Rules in different situations
- Can be downloaded on <https://ec.europa.eu/jrc/en/publication/state-aid-rules-research-development-innovation>



Thank you