



The CroRIS Project: A National CRIS in Croatia

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euroCRIS webinar
May 21 2021



Strategic Project "Scientific and Technological Foresight"

Holder:

Ministry of Science and Education

Partner:

University Computing Centre

Label:

KK.01.1.1.03.0001

Total worth:

€2.08M

EU funding:

€1.77M

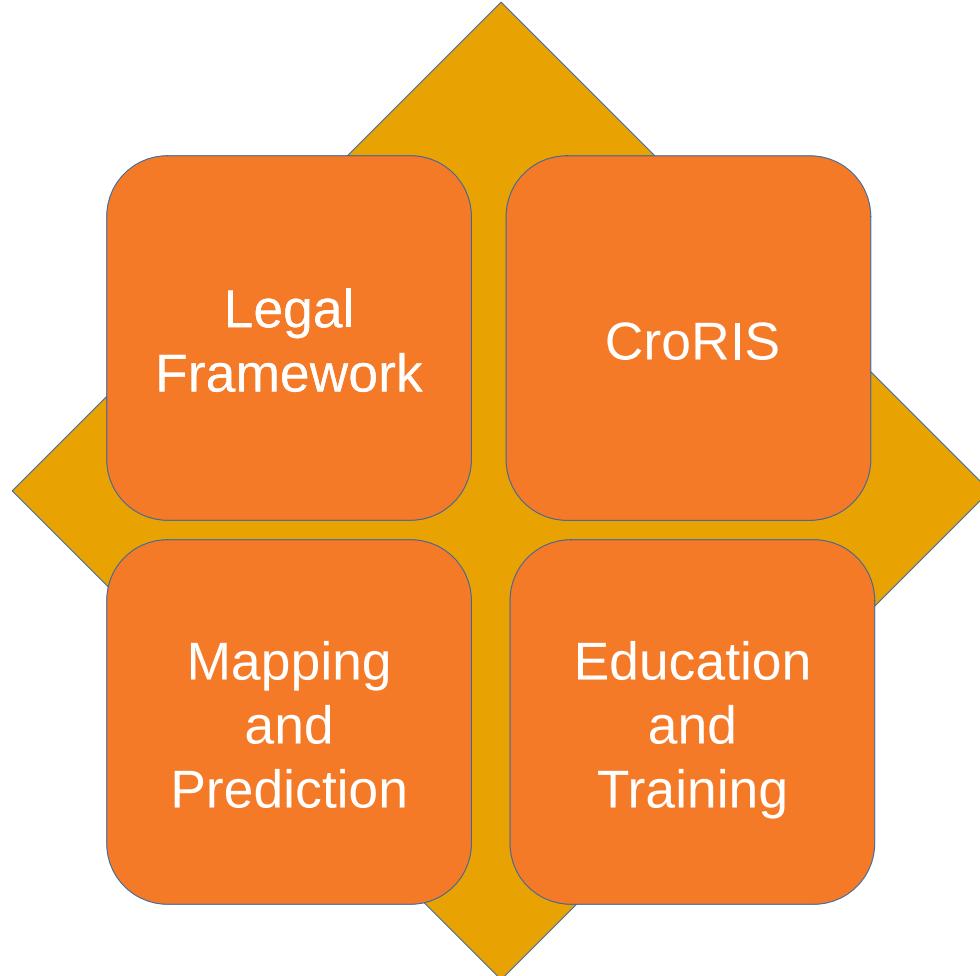
Period:

Dec 2017 to Oct 2022 (expected)

The project is co-funded by the European Union from the European Regional Development Fund



Scientific and Technological Foresight Project



CRIS & CroRIS

- (C)RIS - (Current) Research Information System
 - Scientific & Research Information System
- CroRIS
 - = Croatian CRIS :)
 - = Croatian Scientific Information System
- CroRIS is being built as a key part of the Science and Technology Foresight Project



INFORMACIJSKI
SUSTAV
ZNANOSTI RH



CroRIS Vision

- Comprehensive, complete, reliable info
- Strategic decision making support/foundation
- Open Science promotion
- Business Process support (Ministry of Science and Education, Public Service, Scientific/Research Institutions)
- Open for public use, interoperable and integrated



INFORMACIJSKI
SUSTAV
ZNANOSTI RH



CroRIS End Users

Universities

Science Institutes

Researchers

Board / Admins / Libraries / Repositories

Ministry of Science and Education

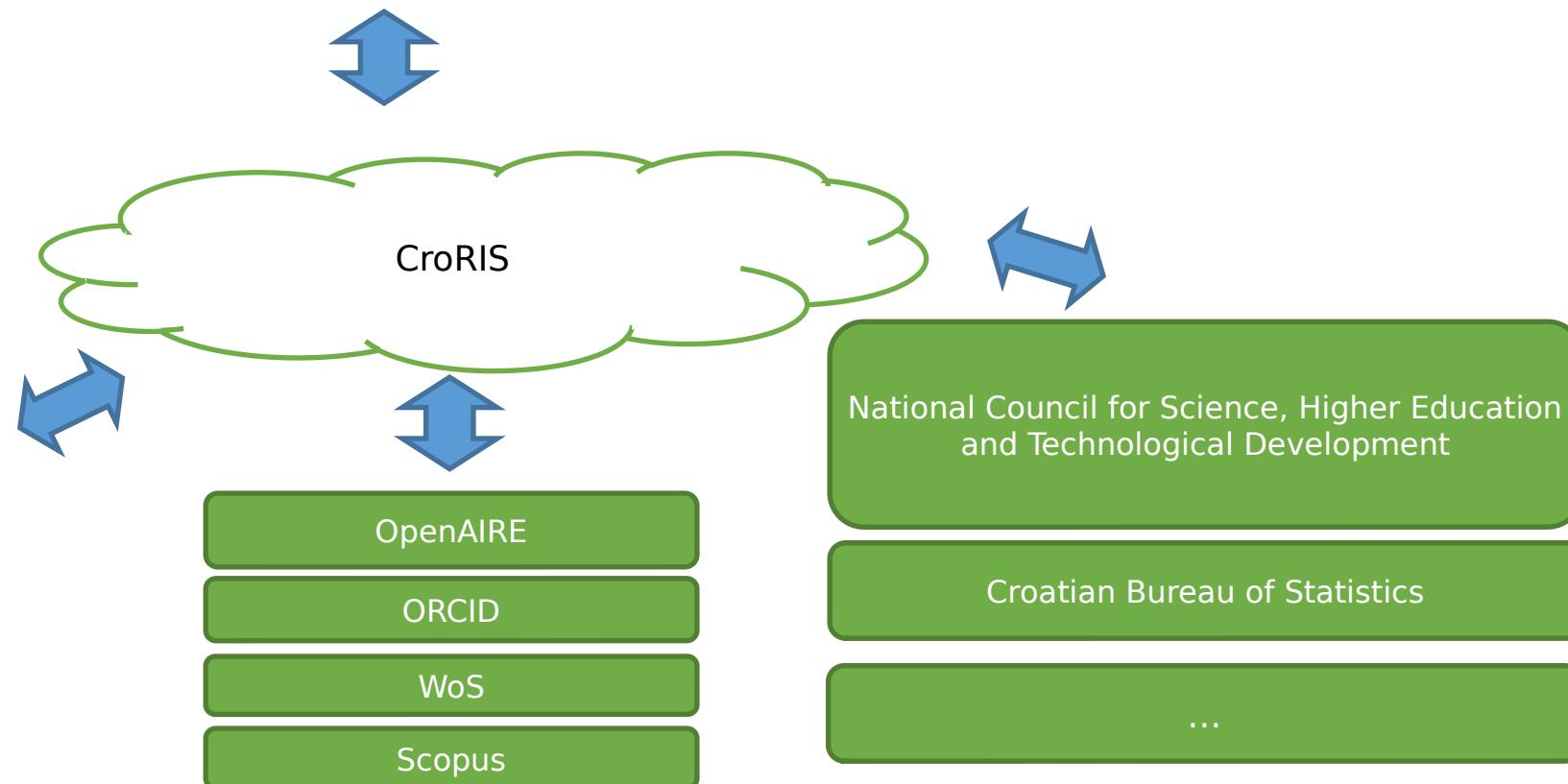
Agency for Science and Higher Education

Croatian Science Foundation

National and University Library

Ministry of Economy and Sustainable Development

Agency for Mobility and EU Programmes



Activities Completed

- Hiring & employment (internal support team)
- Public procurement: technical and consulting services (external teams)
- CroRIS Working Committee setup
- Hardware and Software procurement (internal teams and systems)
- State of Data and Business Processes Survey (within the Croatian Scientific/Research community)
- Project Administration and Public Exposure/Relations
- Conceptual & Project Design
- Public procurement: software development services (external team)
- Programming/Coding – the actual system building
- <https://www.srce.unizg.hr/croris>



What Next?

- Further software development and phased module deployment
- Project changes and extension (end of 2022)
- End user registration, science&research organisations onboarding
- Data exchange between key stakeholders
- End user education
- Legislative changes
- Working Committee cooperation
- euroCRIS conference 2022
- System maintenance



System Development

- Ministry of Science and Education official registries reimplementation and data migration
- MSE – the 1st CroRIS end user
- Tech talk/numbers:
 - ~ 400 tables in a DBMS
 - ~ 800.000 lines of code
 - 20 projects in a code repository (GitLab)
 - 21 virtual machine/server
 - > 1.500 entries in issue management system (Jira)



CroRIS Content

Patents and Products

Events

Journals

Publications

Citations

Equipment and Services

Financing

Projects

Register of Scientists

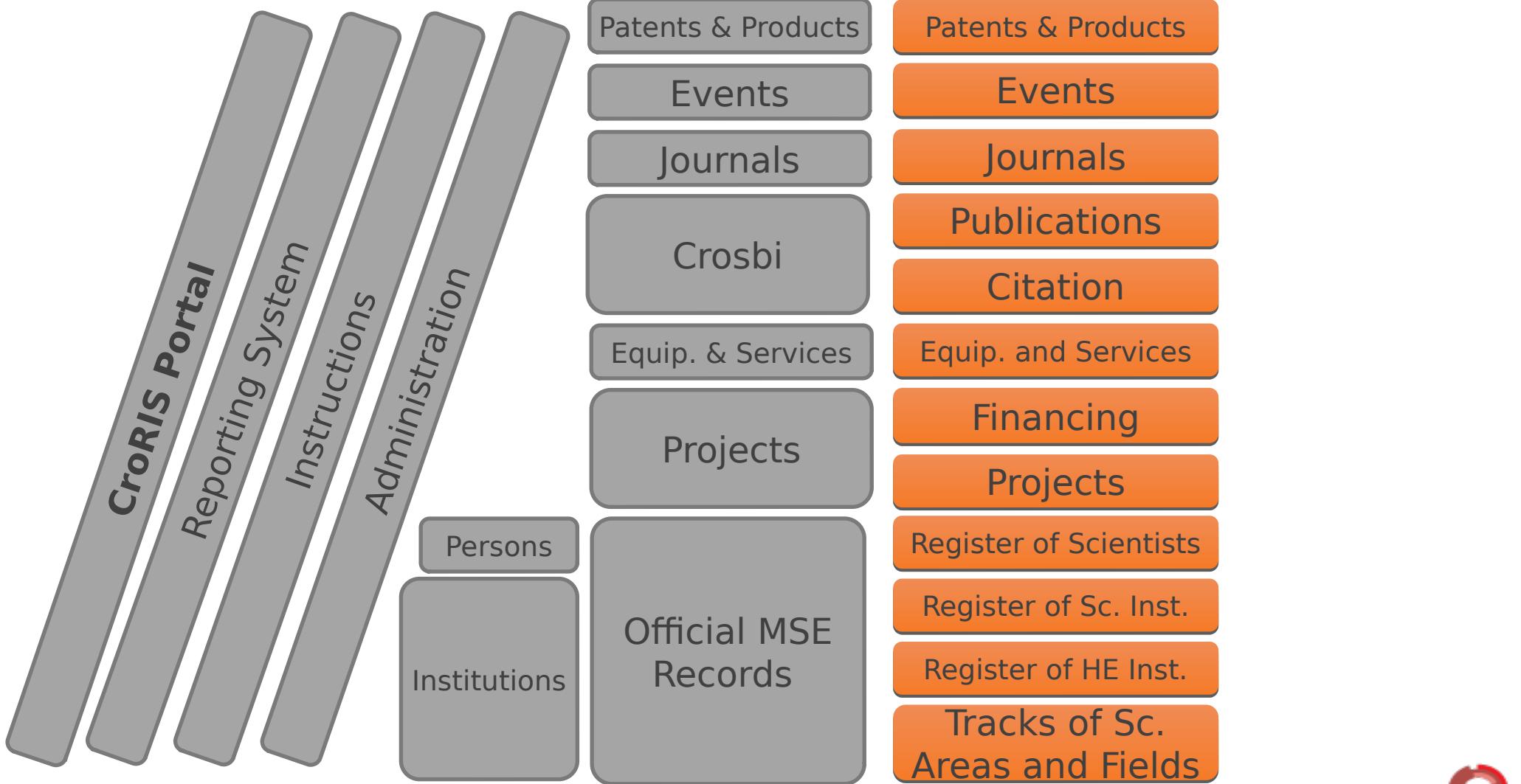
Register of Sc. Institutions

Register of HE Institutions

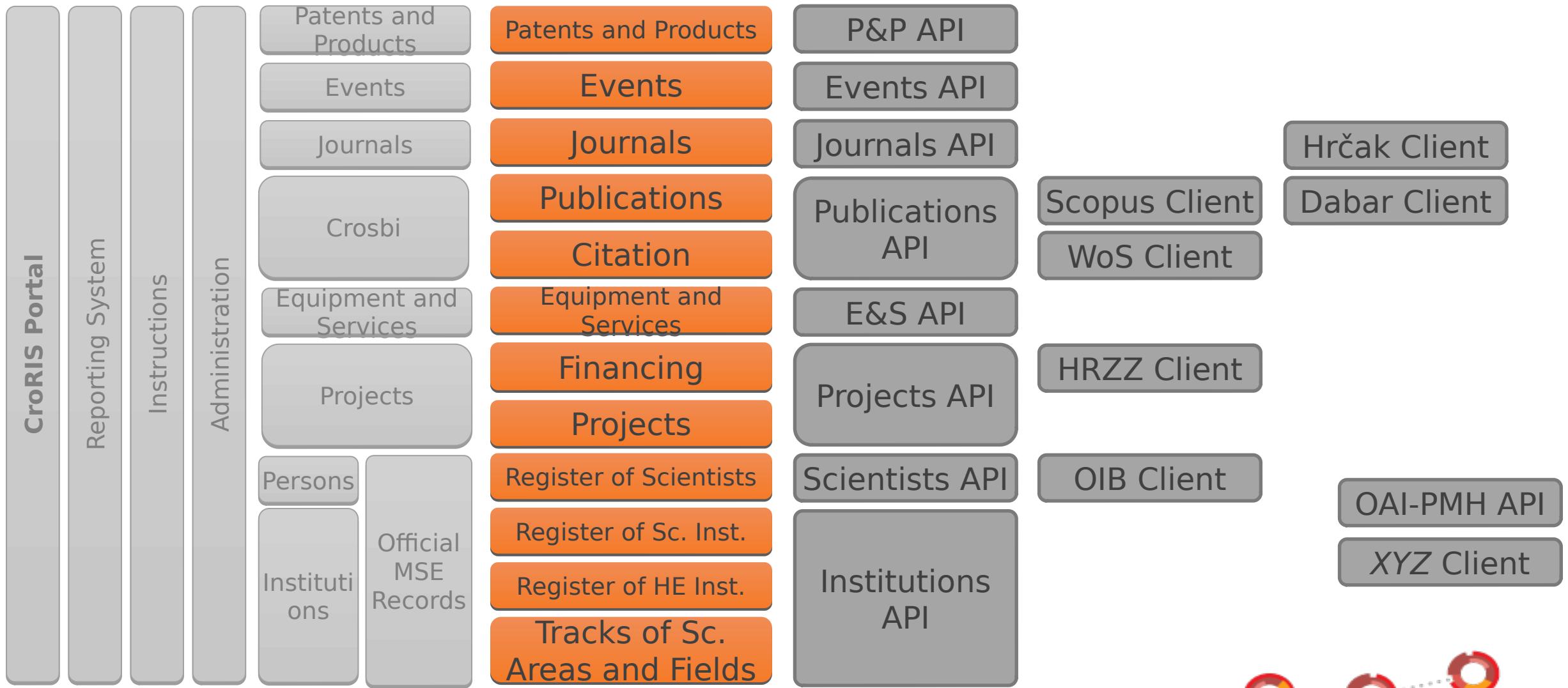
Tracks of Sc. Areas and Fields



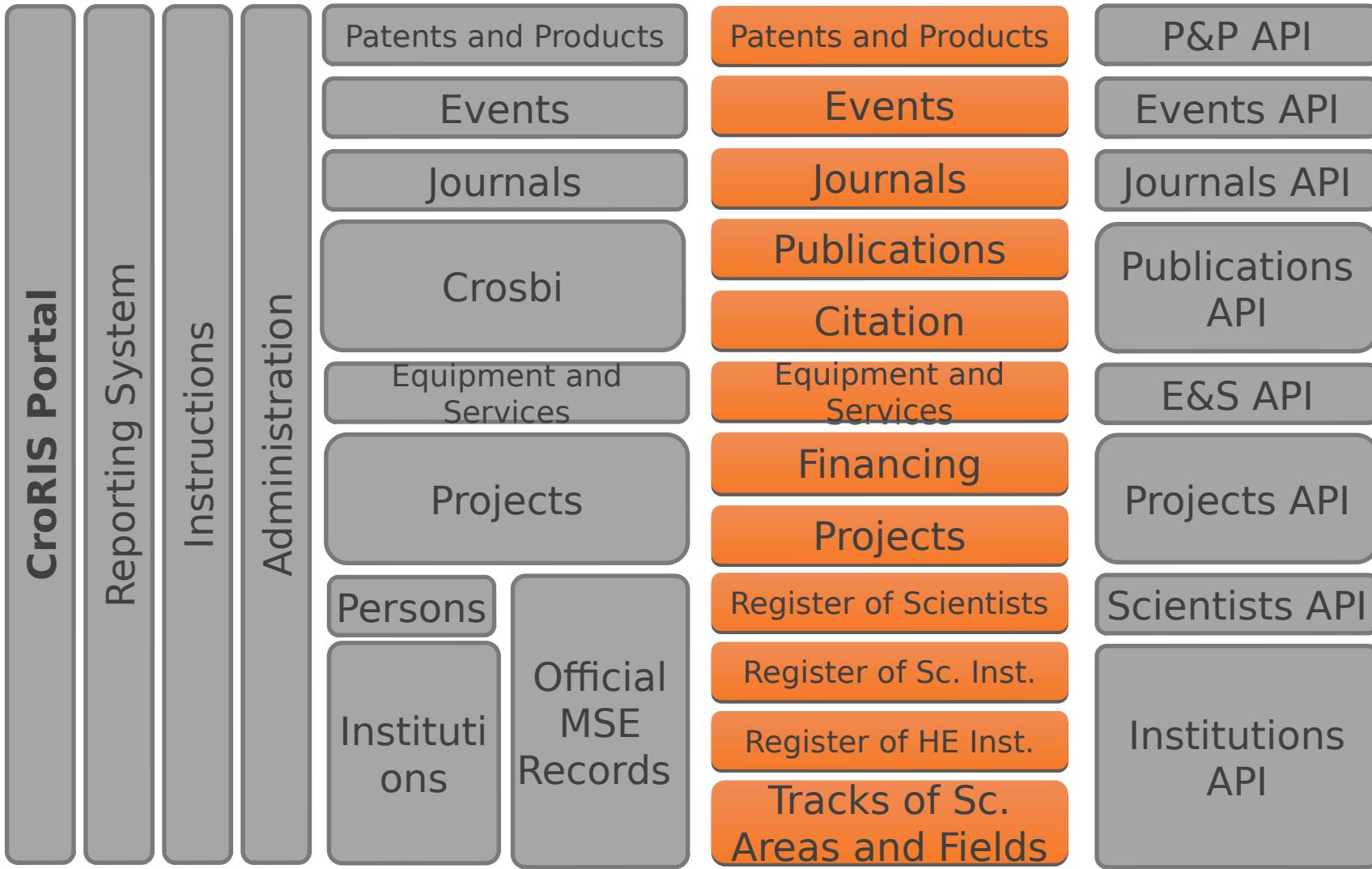
User Modules



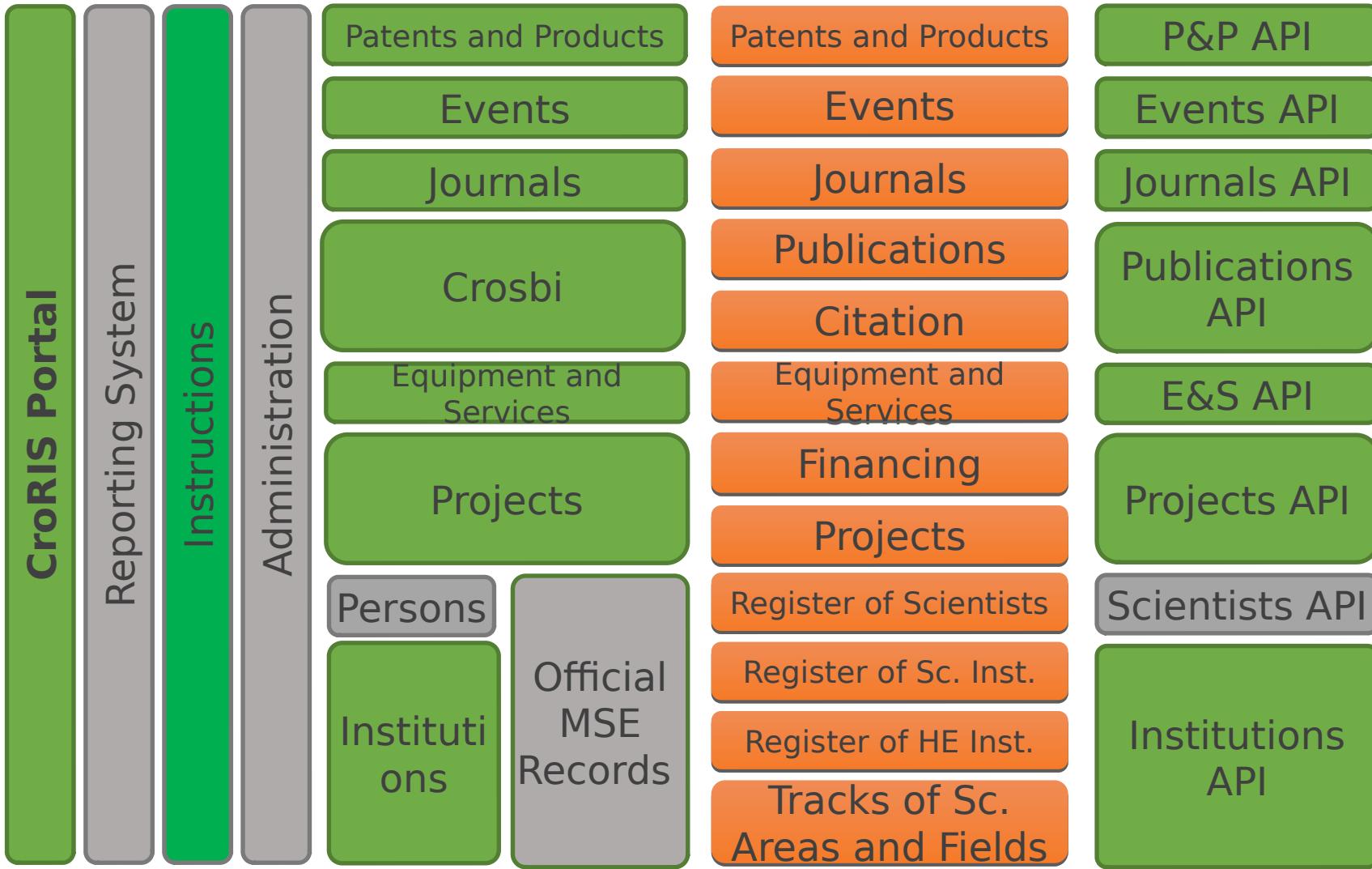
Interoperability modules



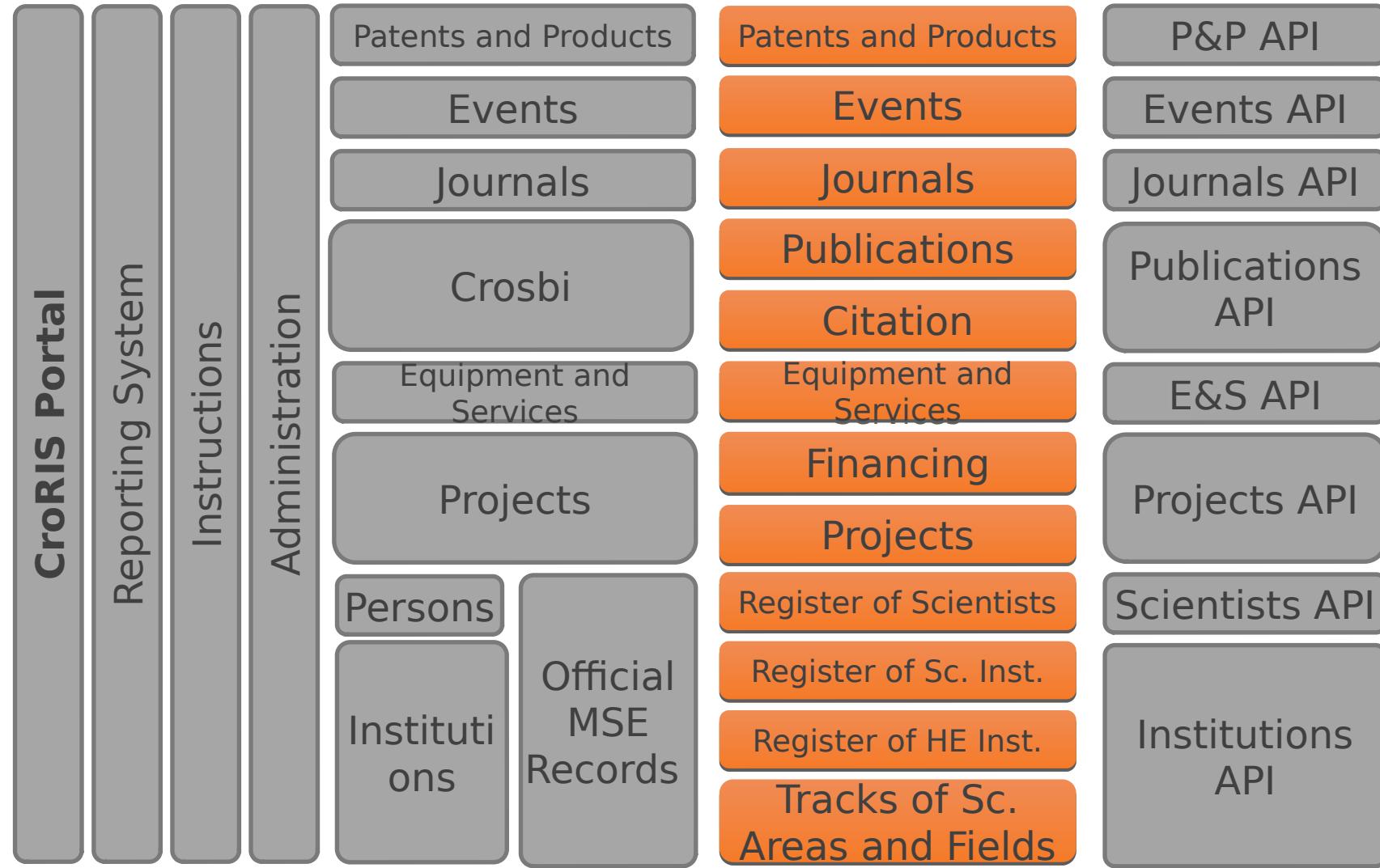
Open Access



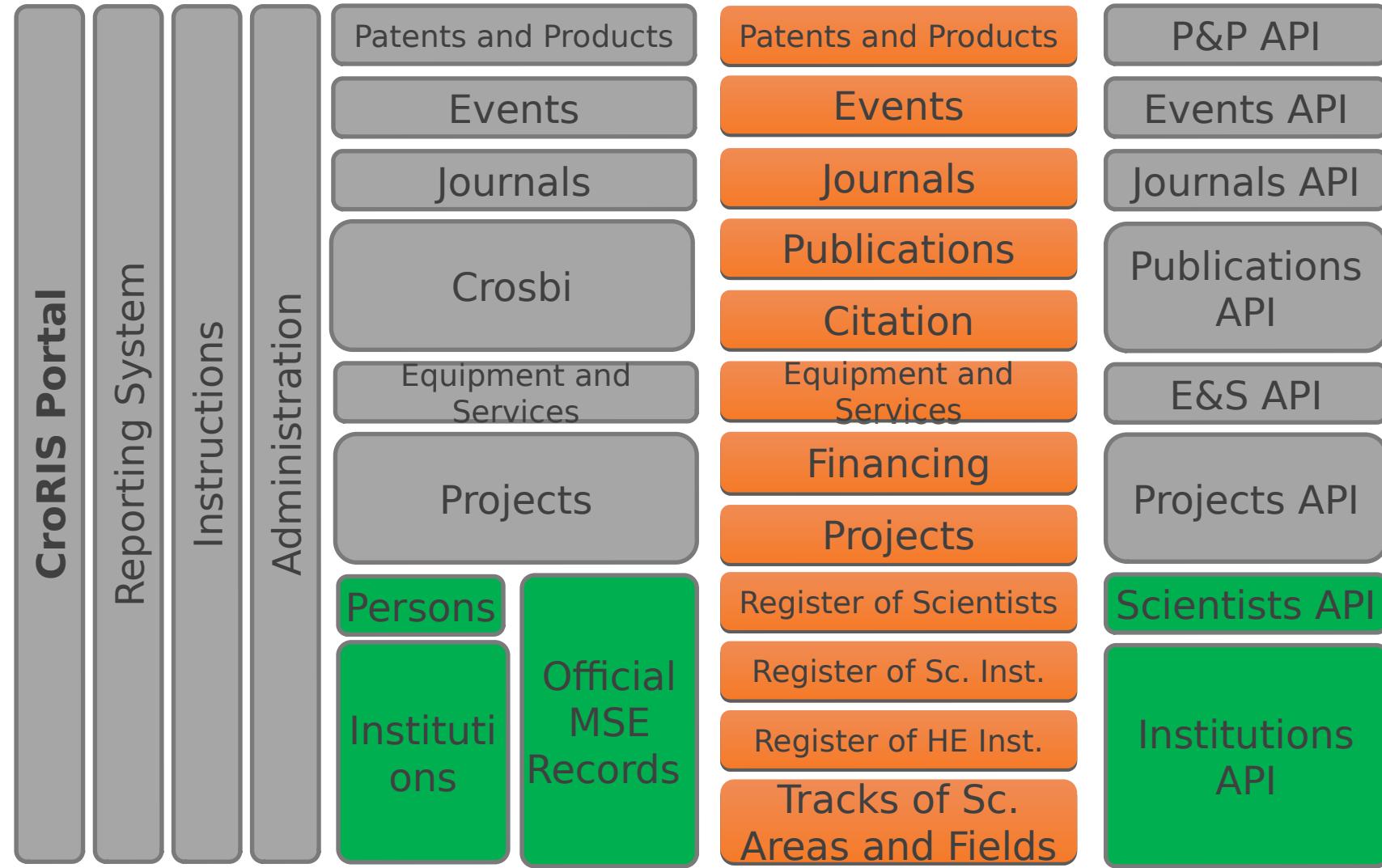
Open Access



Finished work



Finished work



Registers of MSE:
- 37,000 persons
- 4,100 institutions



MSE Register of Scientific Institutions

institutions / **Fakultet elektrotehnike i računarstva, Zagreb**

Fakultet elektrotehnike i računarstva, Zagreb (MBU: 036)

	Details	Sub-entities	Documents	Authorizations	Leaders
Name (Croatian)	Fakultet elektrotehnike i računarstva, Zagreb	+en			
Name (English)	The Faculty of Electrical Engineering and Computing, Zagreb	-			
Court register name (Croatian)	Sveučilište u Zagrebu, Fakultet elektrotehnike i računarstva				
Registration number in the Register	036				
Registration number in the Court Register	080159989				
Institution kind	Fakultet	x	▼		
Institution type	Znanstvena ustanova i visoko učilište	x	▼		
Parent institution		x	▼		
OIB	57029260362				

[Add New Institution](#)



MSE Register of Scientists

scientists / Ognjen Orel

Ognjen Orel (MBZ: 310853)

Details	Employment	Expertise	Vocation	Foreign languages	Awards	HAZU
Name	Ognjen					
Surname	Orel					
Father's/mother's name	Bruno					
Gender	Muški x ▼					
JMBG	1311976330241					
OIB	26315826482					
Identification number	310853					



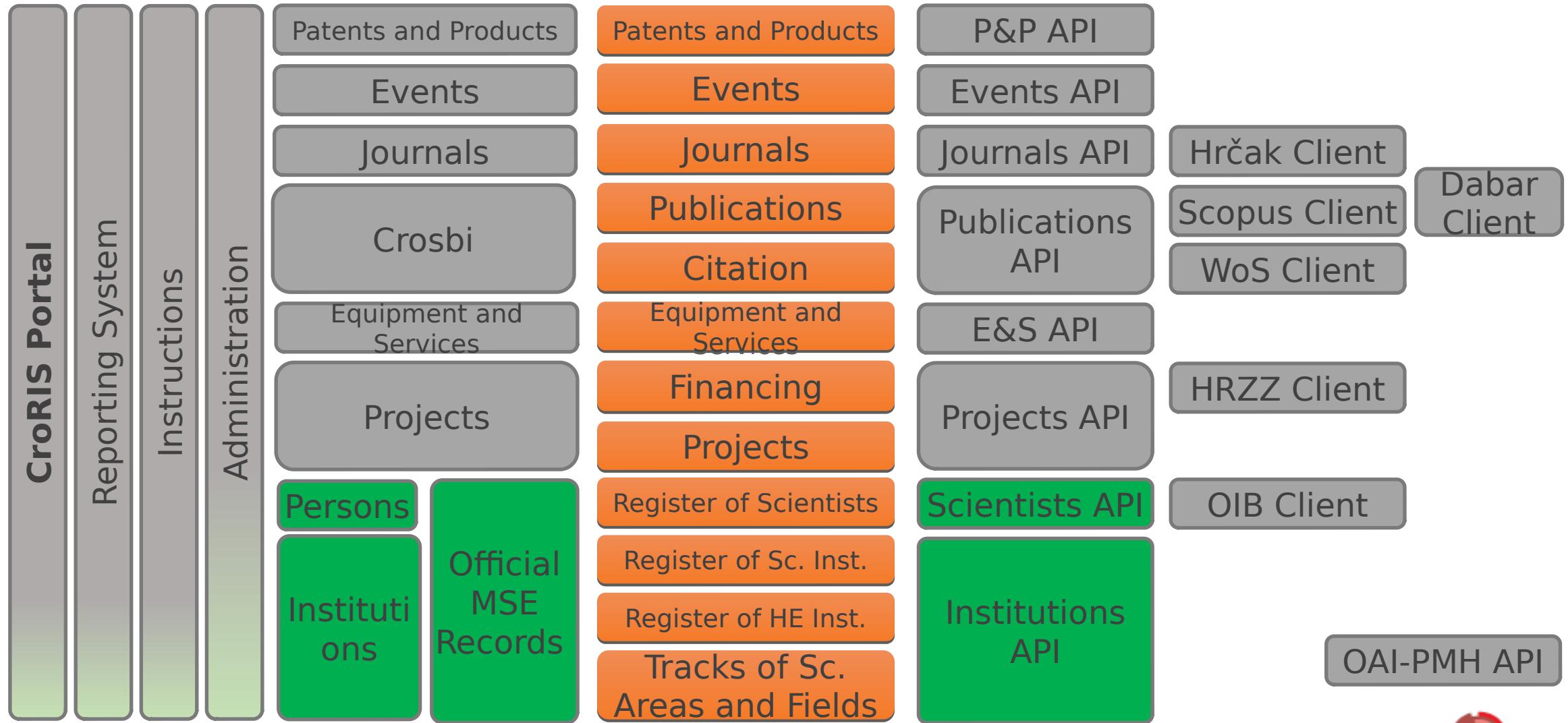
ORCID Integration

Personal data	
Login name	user@srce.hr
First name	Testni
Last name	User
Father's/Mother's name	
Maiden name	
Title before name	
Title after name	
Title before name (international)	
Title after name (international)	
Identification number of the scientist	
ORCID	Login / Register

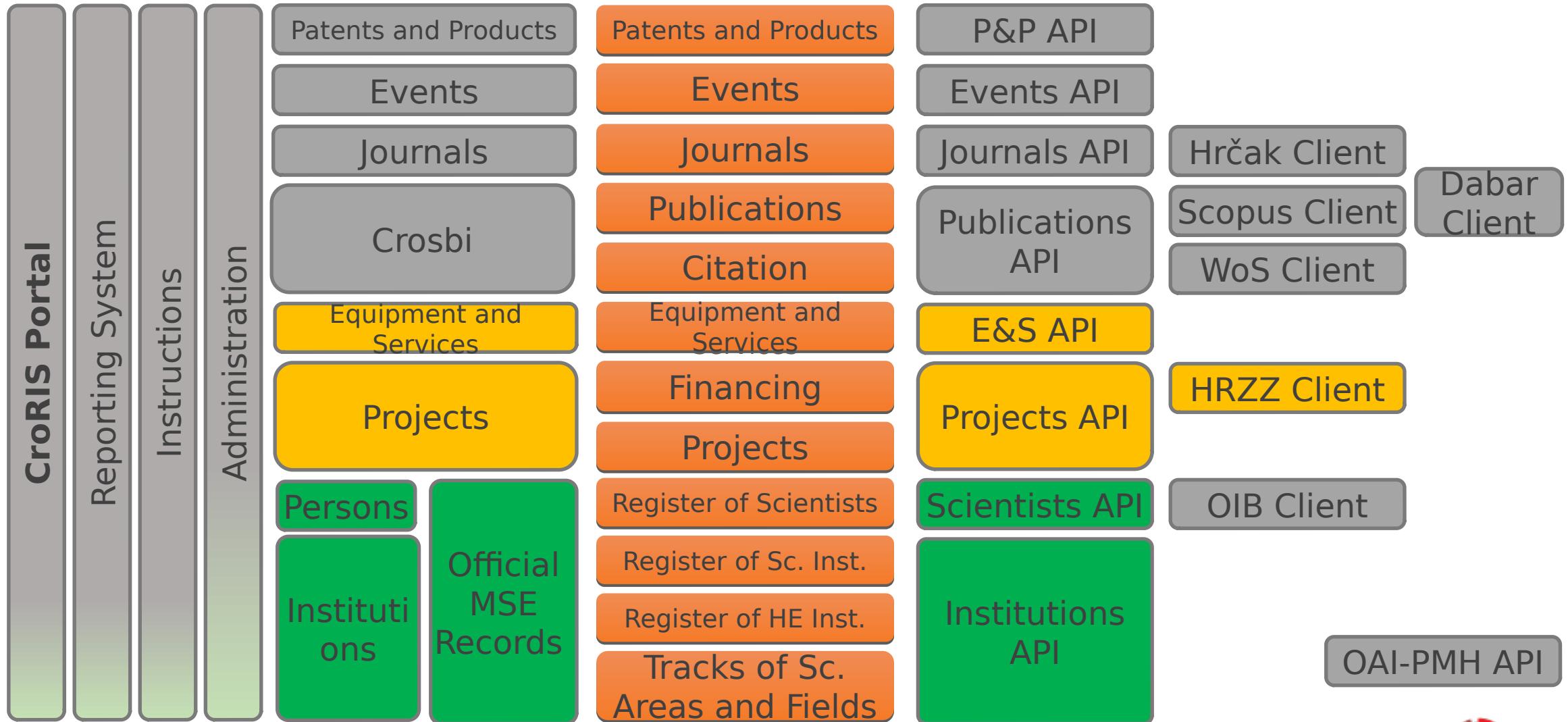
Personal data	
Login name	user@srce.hr
First name	Testni
Last name	User
Father's/Mother's name	
Maiden name	
Title before name	
Title after name	
Title before name (international)	
Title after name (international)	
Identification number of the scientist	
ORCID	https://orcid.org/0000-0002-3852-6484



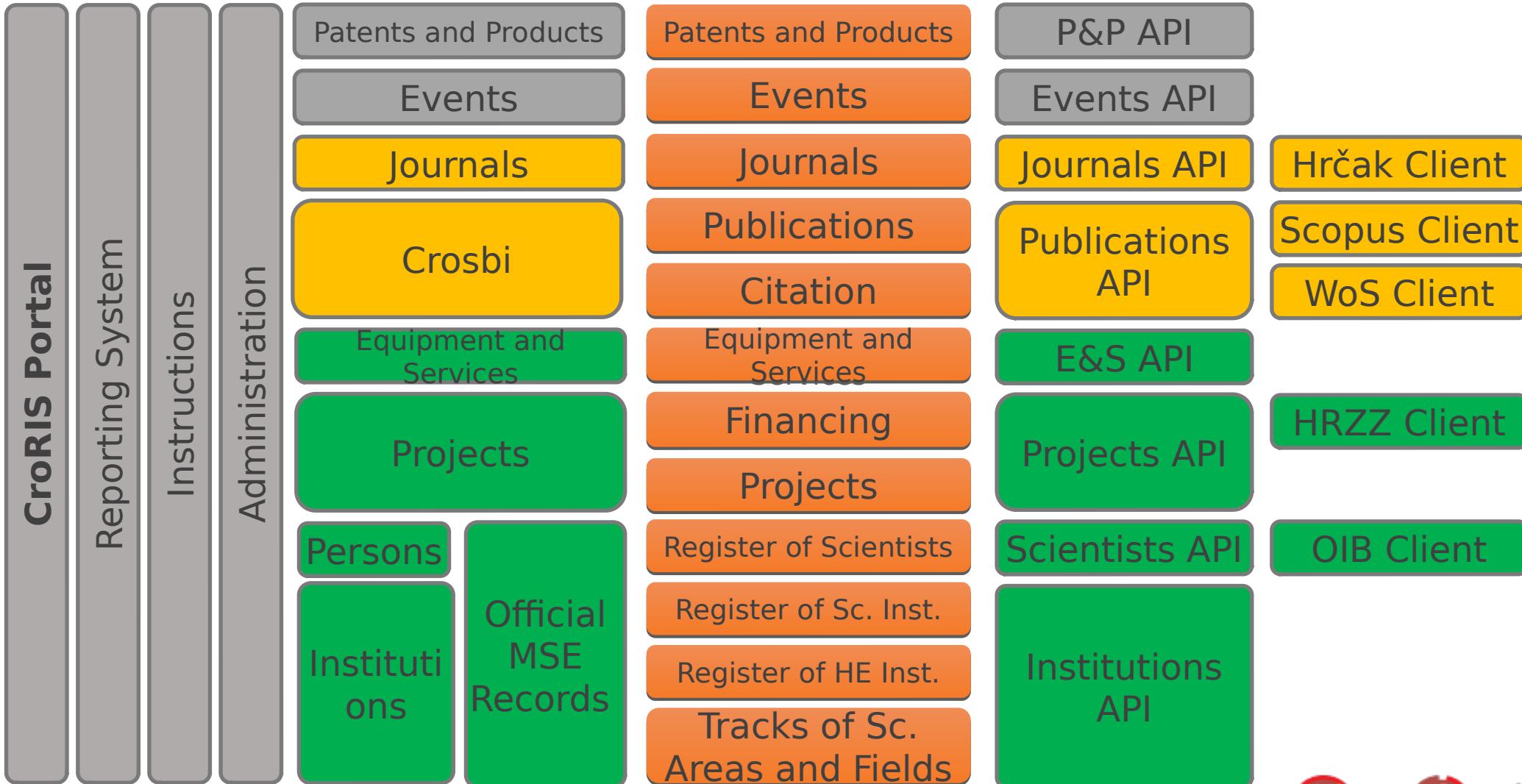
Current Development



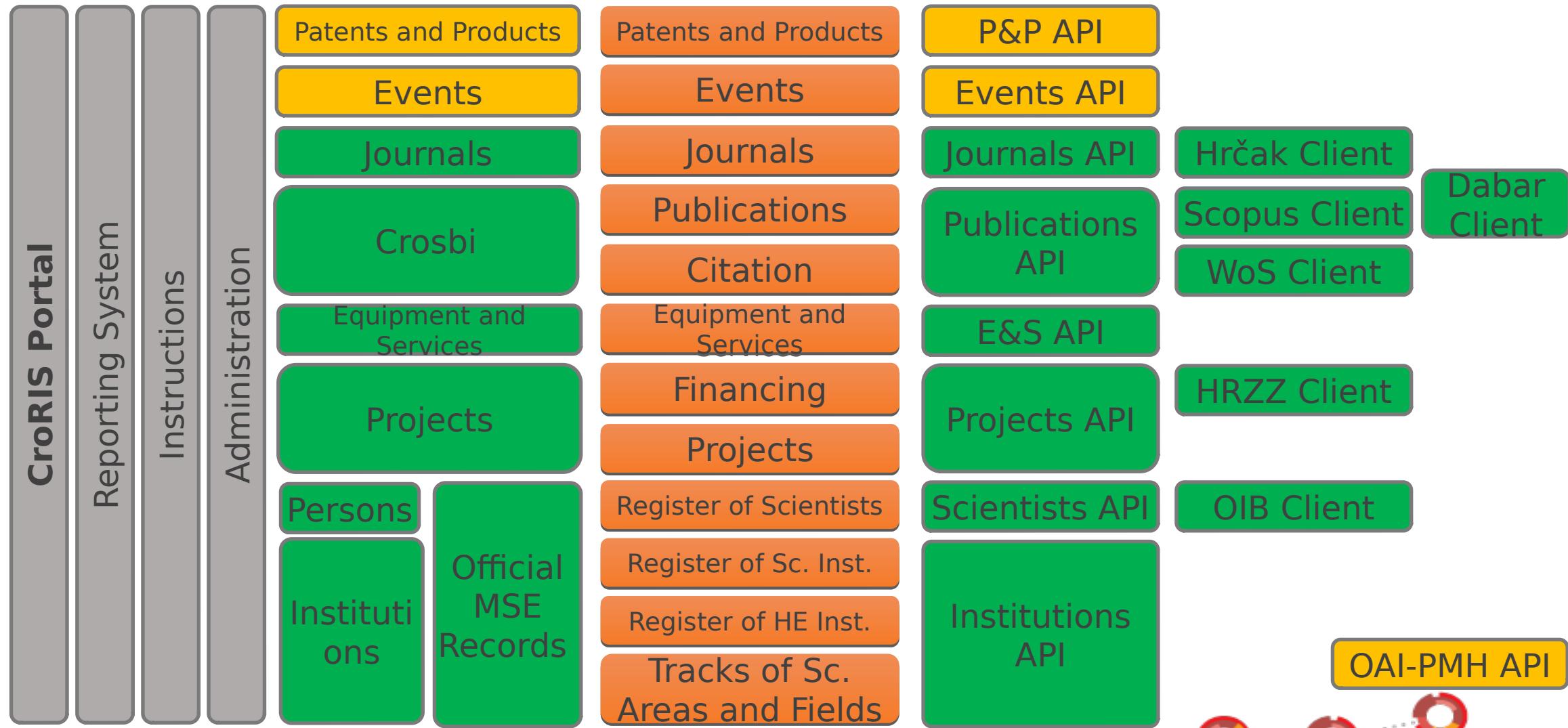
Short term plans (↔ summer 2021)



Mid term plans (→ winter 2021/22)

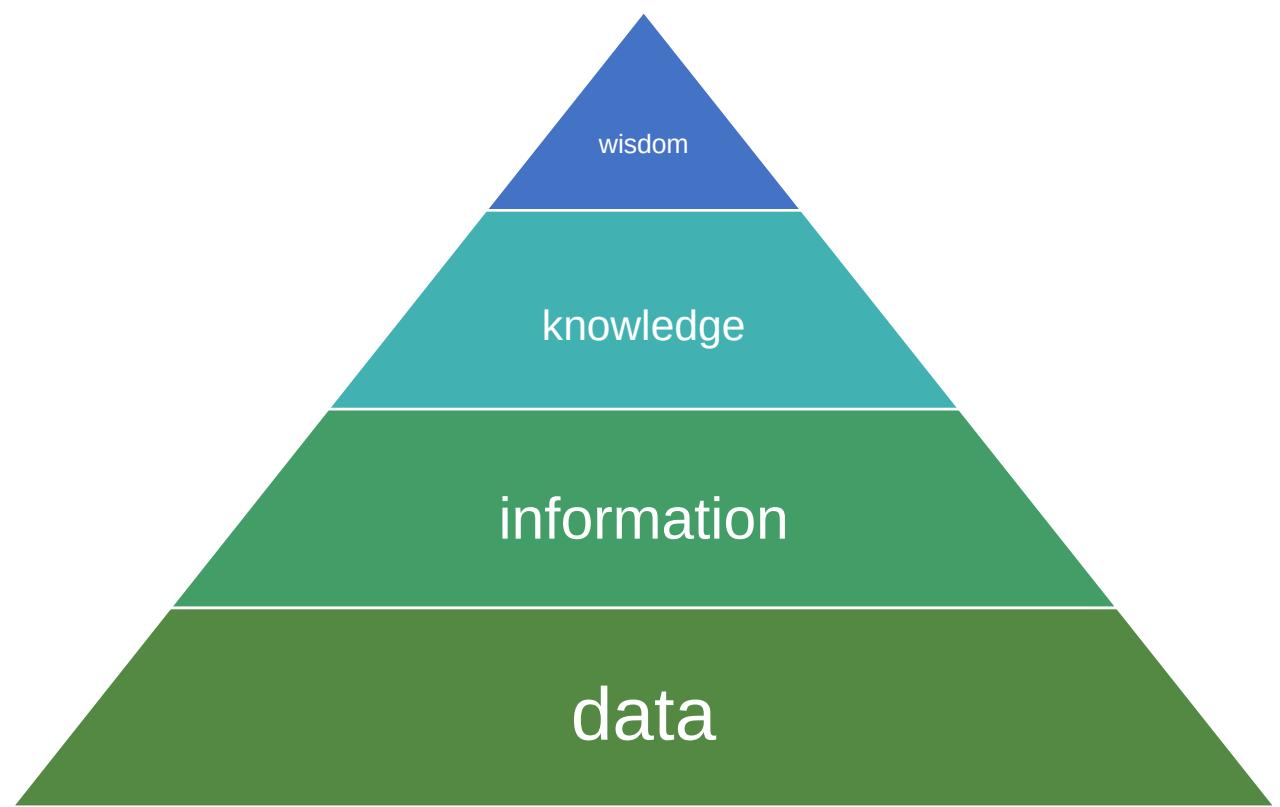


Long term plans (↔ summer/fall 2022)



Information and data in Science, Research and Higher Education

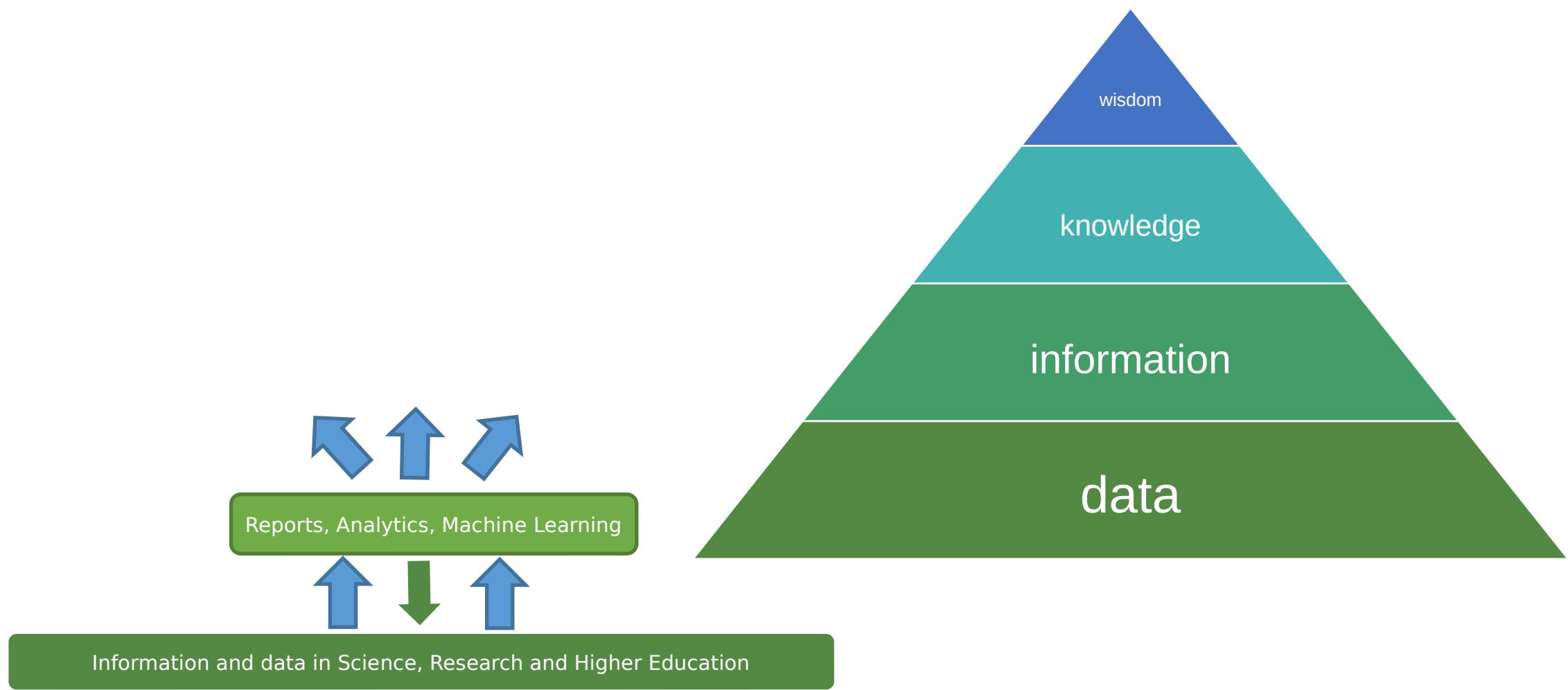


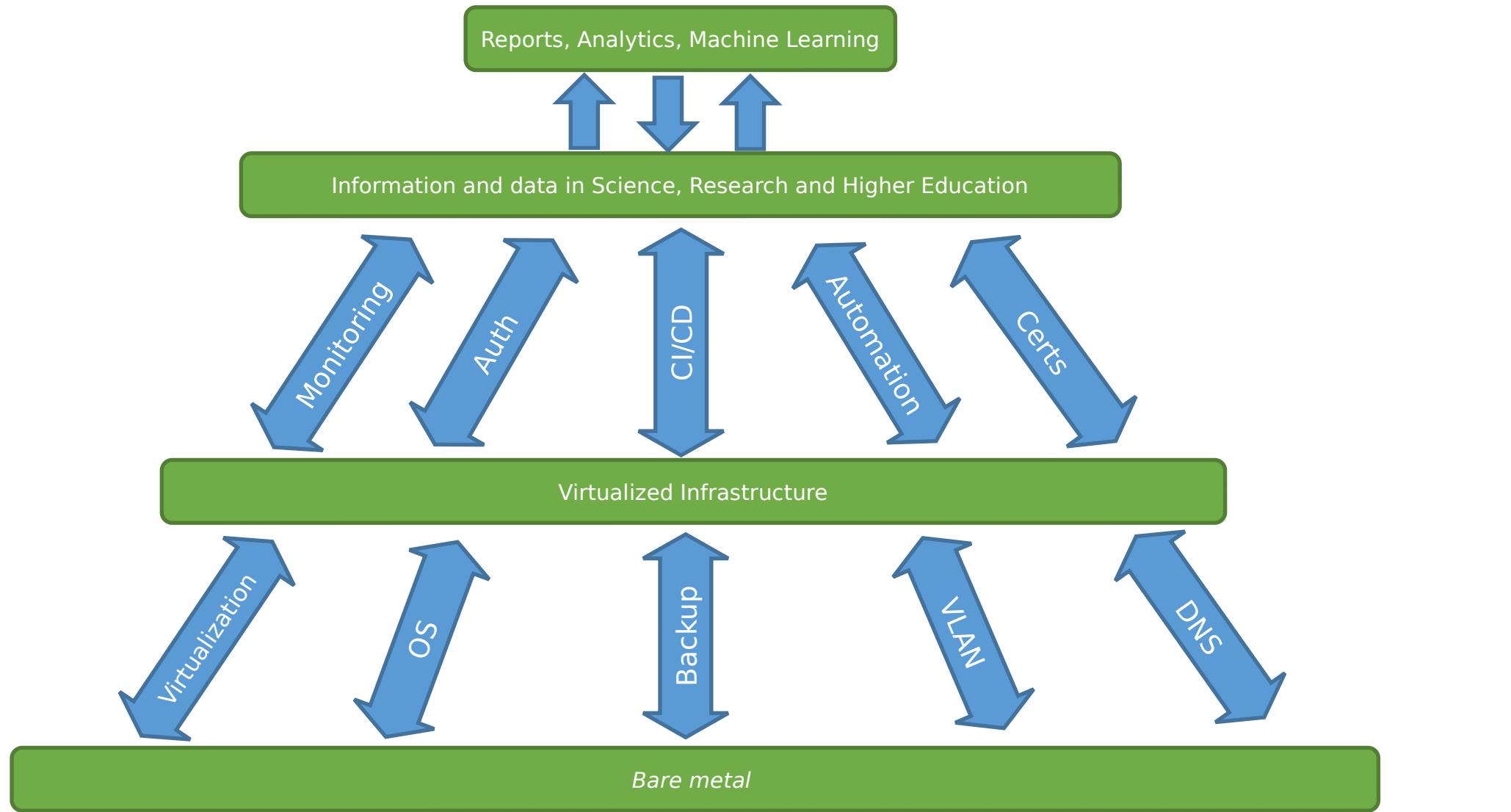


Reports, Analytics, Machine Learning

Information and data in Science, Research and Higher Education







Technology Stack

- CERIF
 - Common European Research Information Format
 - made specifically to support development of CRIS systems
 - "open source"; managed by euroCRIS
 - strong institutional support: backed by the EU Commission
 - EU recommendation to member states
 - standards based: SQL + XML
 - relatively simple: in comparison to more abstract/rich generic semantic frameworks
 - designed from ground up as a relational data model - our area of expertise
 - extremely flexible: capable of modeling and meta-modeling just about any high-level concept using its semantic layer
 - strong support for vocabulary formalization: key enabling point for EU-wide (potentially global) CRIS systems standardization and interoperability
 - easy integration with external systems: OpenAIRE as a minimum, but a lot more to come



Technology Stack (Cont'd)

- Java
 - all apps are Java 11 LTS
- Maven
 - build & dependencies
 - binaries stored in Artifactory binary repository
- Jenkins
 - CI & Deployment
- Git
 - all source in Gitlab
 - feature branch workflow
- Spring
 - all apps are Spring Boot apps
 - web apps: Thymeleaf (server) + HTML/CSS/JS (client)
 - REST APIs: Spring Boot + Swagger (docs)
- R/Shiny
 - analytics/reporting



Technological Improvement Plan

- Containerization
 - Docker
 - dev/test/qa/perftest environments for a start
- CI/CD
 - consolidation within one tool – Gitlab
 - removal of external tools (Jenkins, Artifactory, ...)
 - “native” use of Gitlab Dockerized CI workflow
- Performance
 - Spring Native (still beta)
 - GraalVM – JVM startup times < 1 second
- On the horizon...
 - Java 17 migration
 - first LTS after Java 11
 - Kubernetes deployments
 - start small (dev/test/qa environments)
 - evaluate for production use



CRIS2022

- Biennial conference organized by euroCRIS
- Part of the Foresight Project, 2022. conference
- co-organized by Croatian MSE
- Dates: May 12–14 2022



THE INTERNATIONAL ORGANISATION
FOR RESEARCH INFORMATION

<https://eurocris.org>

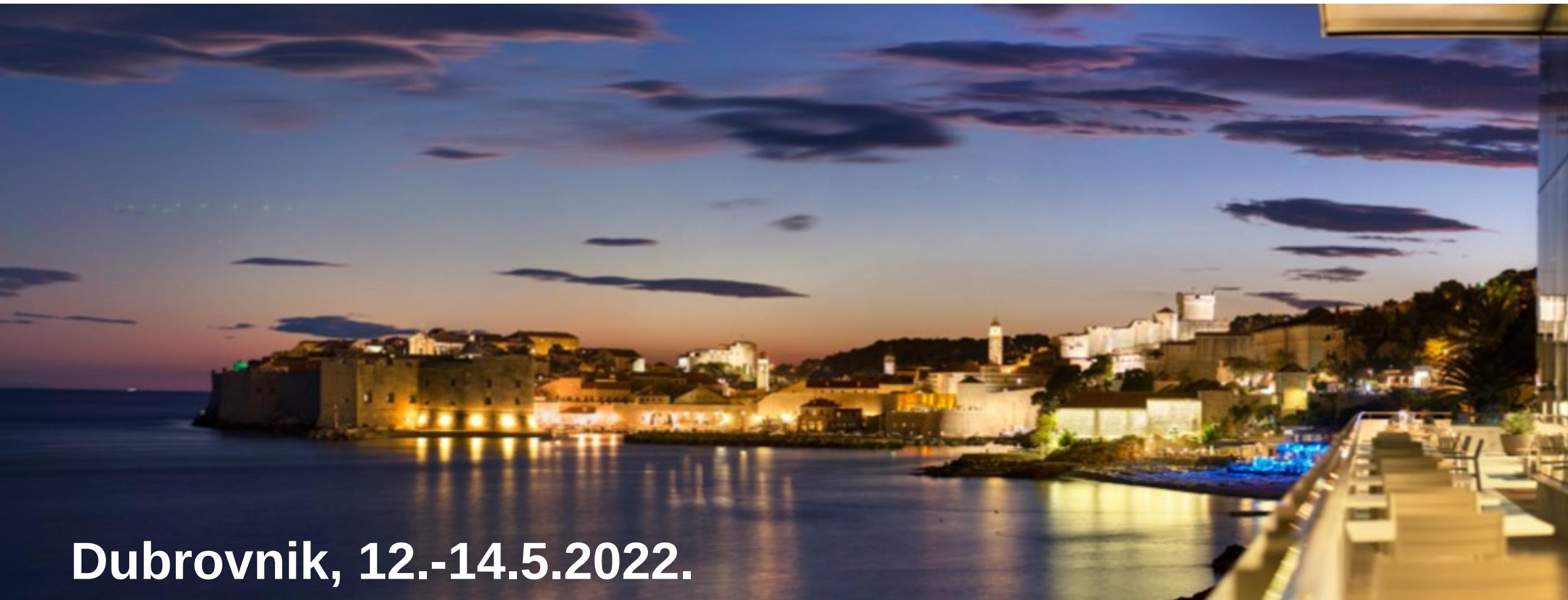


REPUBLIC OF CROATIA
Ministry of Science and
Education

<https://mzo.gov.hr/en>



CRIS2022



Dubrovnik, 12.-14.5.2022.



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