



## High Level Review Committee Interim Report

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# INCoDe.2030 overview

**“The National Initiative for Digital Skills, Portugal INCoDe.2030, aims to stimulate and ensure the development of digital skills as a tool for paving the way for a future-oriented society, focused on the new opportunities arising from the fast-paced adoption of Information and Communication Technologies (ICT).**

**“Launched in 2017, and coordinated by FCT, it is a joint initiative of the governmental areas of Administrative Modernization; Science, Technology and Higher Education; Education; Labor; Planning and Infrastructure; and Economy, of the 21st Constitutional Government of Portugal.”**

**“It is part of the ICT international context, and aims to improve and strengthen Portugal's position in the European Commission's 2017 DESI Index (Digital Economy & Society Index), increasing the country's competitiveness by promoting digital skills.”**

# High Level Review Committee mission

- “INCoDe.2030 requires a continuous assessment and external peer review in international comparison and making use of the best criteria and international practices”
- “The goal is to visit Portugal, once or twice a year, to review a few projects and activities, and help the management of INCoDe.2030 to move forward and guarantee a continuous upgrade, as well as to achieve the goal of digital leadership in a few areas by 2030”
- “Visit a wide sample of sites/projects that are currently under way within the 5 axis of the initiative, in order for you to judge the relevance and the diversity of those projects”

# High Level Review Committee members

## ○ **Laurent CROUZET**

- ✓ French Ministry for Higher Education, Research and Innovation
- ✓ General Directorate for Research and Innovation
- ✓ Deputy Scientific Director of the Math, Physics, Nanoscience, Digital Department

## ○ **Donatella CASTELLI**

- ✓ National Research Council of Italy (CNR)
- ✓ Istituto di Scienza e Tecnologia dell'Informazione "A. Faedo"
- ✓ Research Director - Head of the Networked Multimedia Systems Lab (Data Infrastructures, Digital Libraries, Artificial Intelligence for Multimedia Information Retrieval, Text Learning)

## ○ **Nora McGREGOR**

- ✓ British Library
- ✓ Digital Scholarship Department
- ✓ Digital Curator

# High Level Review Committee

## ○ **Disclaimer:**

- ✓ As independent experts, we are not engaging the opinion of the national entities whom we are working for...
- ✓ ... But we are bringing our experience and background
- ✓ Not yet a complete view of the whole program: first session of visits
- ✓ Initial preliminary impressions

# INCoDe.2030 first impressions

- **An inescapable program and a dynamic team**

- ✓ Coherent robust vision, preparing the future
- ✓ Digital skills is not only technical: a human centric approach is mandatory

- **Very successful starting phase**

- ✓ INCODE2030 has proven to be an effective centering/coordinates point and as such a catalyst for change

- **Next steps to build on successes**

- ✓ Reviewing, evaluating, prioritizing...and iterating

# Axis1: Inclusion

*Ensure that the whole population has equal access to digital technologies to obtain information, communicate, and interact with others.*

## ○ **Visits related:**

- ✓ CCDI (St Tirso and Barcelos)
- ✓ BizDirect in Viseu to promote girls in ICT
- ✓ Polytech Viseu on Digital Self-Assessment Tools

## ○ **Examples of actions already undertaken**

- ✓ Development of an Integrated Network for Public Communication Services that will ensure Internet Access for everyone
- ✓ Development of a Network of Creative Communities for Digital Inclusion to impart digital competences to under-represented groups
- ✓ Strengthening gender equality in terms of access to and development of digital competences

# Axis1: Inclusion

## ○ **Committee Recommendations**

- ✓ Ensure strong representation from the public library administration and Higher Education systems. If supported properly, the existing library system infrastructure already in place can be leveraged to reach this audience.
- ✓ Actions to address the important issues around gender balance, and unconscious bias should not be exclusively present in this axis, but in each of the axes.



# Axis2: Education

*Ensure the education of the younger population by stimulating and reinforcing digital literacy and digital competences at all levels of schooling and as part of lifelong learning.*

## ○ **Visits related:**

- ✓ Ciencia Viva Lisbon (Movimento Código Portugal (Portugal Coding Move))
- ✓ School in Amadora

## ○ **Examples of actions already undertaken**

- ✓ Qualification and re-qualification of Teachers in ICT, to expand the teaching of Computing to students at all levels
- ✓ Development of digital educational resources
- ✓ Promotion and dissemination of the Robotics and Digital Literacy Code
- ✓ Programs dedicated from primary schools to high schools

# Axis2: Education

## ○ **Committee Recommendations:**

- ✓ Look to build/support a network that regularly brings together employers and teachers together to exchange ideas and review the computing curriculum to ensure teaching stay up to date, and to help ensure that other school subject qualifications provide a foundation for a broader range of digital careers.
- ✓ Continue to support and promote engagement with digital through innovative robotics and coding competitions.
- ✓ Put in place data capture/mechanisms for measuring impact over time.

# Axis3: Qualification

*Capacitate the active population by providing them with the knowledge they need to become a part of a labour market that relies heavily on digital competences.*

## ○ **Visits related:**

- ✓ SWitCH (Porto)
- ✓ Polytech Viseu + IEFP
- ✓ Polytech Leiria
- ✓ IEFP (Lisbon)

## ○ **Examples of actions already undertaken**

- ✓ Qualification and Digital Specialization of the employed or unemployed population for the private sector, in services, commerce, industry, and agriculture, creating the necessary competence to leverage the digital transformation of companies.
- ✓ Qualification and Digital Specialization of workers in Public Administration.

# Axis3: Qualification

## ○ **Committee Recommendations:**

- ✓ Continue to benefit from regional implementation via Polytechnic institutes
- ✓ Look to expand industry partnerships, which provide crucial work experience opportunities alongside study
- ✓ Undertake a prioritization exercise, strategic planning in the next phases will help with this

# Axis4: Specialization

*Promote specialization in digital technologies and applications to improve employability and create higher added value in the economy*

## ○ **Visits related:**

- ✓ Bosch and Altran in Porto
- ✓ TeSP with Deloitte in Viseu

## ○ **Examples of actions already undertaken**

- ✓ Network of masters specialising in digital competences
- ✓ Network of digital competences and innovation labs

# Axis4: Specialization

## ○ **Committee Recommendations:**

- ✓ Continue to support the role of Polytechnic Institutes as a key player
- ✓ Adapt a similar approach in other academic institutions/Universities

# Axis5: Research

*Ensure conditions are in place for the production of new knowledge and active participation in international R&D networks and programs*

## ○ **Visits related:**

- ✓ Minho Advanced Computing Centre (MACC)

## ○ **Examples of actions already undertaken**

- ✓ Development of a National Network for Advanced Computing to enable R&D in cutting-edge disciplines in Computer Science
- ✓ Development of the AI Portugal plan
- ✓ International partnerships

# Axis5: Research

## ○ **Committee Recommendations:**

- ✓ Digital sciences: support the convergence between HPC, HPDA, AI and also cybersecurity
- ✓ Promote big data and FAIR (Findable, Accessible, Interoperable, Reusable) management
- ✓ Promote and facilitate interdisciplinary convergences at institutional levels for stimulation of innovation
- ✓ Ensure the national programs are linked to the European one (participation to Horizon Europe and Digital Europe)
- ✓ Explicitly include data sharing, management and exploitation across all the axes as these specific ICT skills will become mandatory in all research areas (data-driven research) and innovation (data economy)



# High Level Review Committee Conclusions

- **A coherent and very ambitious program, an inspired vision for the future**
- **INCoDe.2030 represents a concrete commitment to tackling a major challenge and is a useful vehicle by which Portugal can transform its economy**
- **Exceptional work thus far considering the size of the core implementation team**
- **Particular highlights:**
  - ✓ Strong commitment to deliver INCoDe.2030, from all levels, Ministerial, participants, team
  - ✓ Involvement of all the regions/areas of the country
  - ✓ Strong links to Industry and “real world”
  - ✓ Key role of Polytechnic Institutes
  - ✓ Ambitiousness of the Research Program (Axis5)

# High Level Review Committee Recommendations

**INCoDe.2030 has just started,  
it is a long-term action that will benefit from continuous support**

# High Level Review Committee Recommendations

## Organizational/Structural recommendations

### ○ Reviewing

- ✓ Ensure structure and budget meet the needs of the program. We recommend a full-time Project Officer with a dedicated budget to support the coordination of all projects and actions.
- ✓ Continue High Level Review Committee, expand as necessary to ensure diversity of expertise and representation (private sector/industry, schools, etc.)

### ○ Evaluating

- ✓ Set shared milestones and deliverables at action level
- ✓ Put in place data capture/mechanisms for measuring impact over time
- ✓ Capture best practices into case studies that can be implemented

### ○ Prioritizing

- ✓ Identify actions depending on global budget and resources
- ✓ Actions can be cross-cutting individual Axis

### ○ Iterating the above

- ✓ Agree an annual Action Plan at the right level