

# UN Task Team on Training, Competencies and Capacity Development

# Work streams in the Task Team

- Curriculum development
  - Guidance on training development
- Big Data Competency Framework
- NSO Big Data Maturity Matrix
- Big Data Training catalog

# Curriculum development

- Provide basis for consistent development of training courses
- To provide maximum needed impact, identify:
  - General Big Data competency area
    - Specific competency area (e.g. Classification algorithms)
  - Job behaviours
  - Learner / persona (e.g. Senior managers, Project managers, Data scientists)
  - Instruction level (e.g. Foundation, Intermediate, Advanced)
- Linking to Competency Framework
- Clear setting of learning objectives
- Discussions with each task team have taken place to define competencies needed and develop corresponding curricula (with above considerations)
  - Rapid Needs Learning Analysis sessions

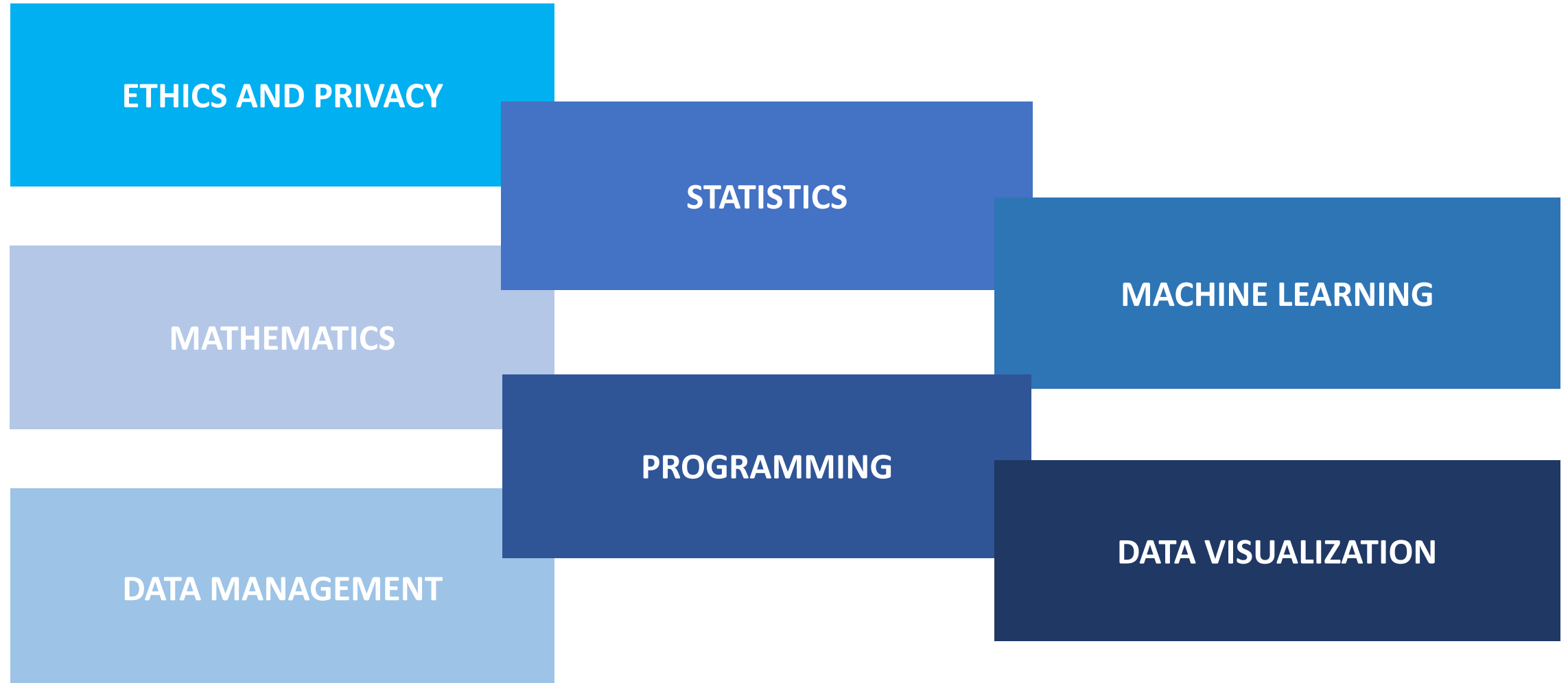
# Curriculum development

- Development of guidance for course development
  - To assist other task teams
  - Includes practical aspects of course delivery
- “drop-in / coaching sessions” for other task teams, covering:
  - Selection of most appropriate type of training delivery
  - Information architecture
  - Tone and wording
  - Use of videos
  - Activity building
  - Construction/importing/selection of activities in a course

# Big Data Competency Framework

- General guidance on building Big Data skills
- Extensive (yet not exhaustive) set of skills and knowledge useful for acquiring and processing big data
- Recognition that:
  - different NSOs run different projects
  - different types of data specialists (e.g. data analyst, data engineer, data scientist, etc.) require different compositions of skills and knowledge
  - not each data specialist must possess all of the skills listed in the framework
- Two approaches:
  - Competency areas approach
    - Core competencies
    - Generic (soft) skills
  - (Simplified) statistical production process approach

# Competency areas approach - core competencies



Dimension 1			
Name of the area	Data management		
Dimension 2			
Competence title and description	To possess data management knowledge in a range of below-listed issues: 1) Database systems: database management systems, data models – definition and types, entity relationship model, models implementation (pre-relational, relational and object-oriented models) 2) Basics of cryptography: hash function, binary tree 3) Database: relational database, tabular data, data frames and series, shard, on-line analytical processing, data warehousing, data lakes, data vaults, logical multidimensional data model, extract, transform and load (ETL), <u>NoSQL</u> 4) Varied data formats: ( <u>Json</u> , <u>shp</u> , <u>XML</u> , <u>csv</u> )		
Dimension 3	A - Foundation	B - Intermediate	C - Advanced
Proficiency levels	Demonstrate knowledge and understanding basic data management skills.	Demonstrate knowledge and understanding of, data base management tools and methods, and ability to apply some of them.	Thorough knowledge of proficiency in data base management and skillfulness in performing operations on varied data sets. Is able to advise others in finding data management solutions.
Dimension 4			
Knowledge examples	<ul style="list-style-type: none"><li>• Know the basic concept of SQL and <u>NoSQL</u> databases (such as table, column, field, field type, primary and foreign key)</li><li>• Understand the consequences of using the hash function</li><li>• Define functional dependencies occurring among the analyzed data</li></ul>		
Skills examples	<ul style="list-style-type: none"><li>• Able to create database structures in selected database management systems (e.g. MySQL, <u>MongoDB</u>, <i>more in annex</i>)</li><li>• Able to present the logical structure of the database using tables and graphical relationships in selected programs</li><li>• Apply ETL techniques - acquisition, processing (including pre-purification) and loading data from non-statistical sources</li></ul>		
Attitude examples	<ul style="list-style-type: none"><li>• Systematically supplement knowledge of new trends in the field of computer science on the subject of computer data storage</li><li>• Identify data sources and assess their usefulness in complementing studies at hand</li><li>• Carefully analyze the data and adjust them to the needs of database users</li></ul>		

# Generic (soft) skills

Indispensable and inherent part of Big Data competencies catalogue

Span all stages of the statistical production process

\*Not the main focus of this Competency Framework





# Simplified production process approach

## CORE COMPETENCIES

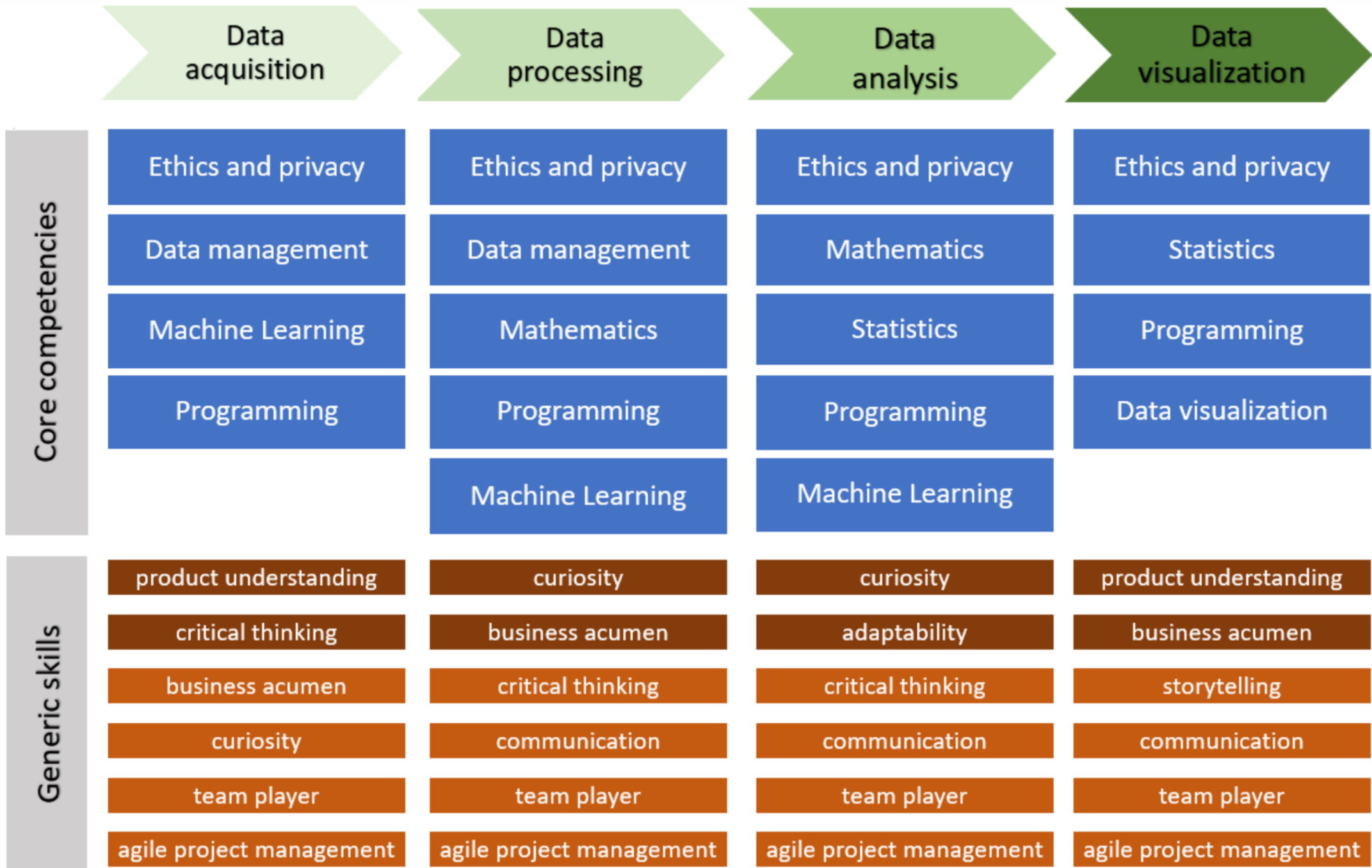
**DATA  
ACQUISITION**

**DATA  
PROCESSING**

**DATA  
ANALYSIS**

**DATA  
VISUALIZATION**

## GENERIC (SOFT) SKILLS



# NSO Maturity Matrix

- Self-assessment tool for the NSO to determine where it is now and where it wants to be
- The NSO will set its own target !
- Through answering a set of questions, the NSO will be provided with a picture of where it currently is on its big data journey, considering several dimensions:
  - Legal and Policy framework
  - IT infrastructure
  - Human resources
  - Application
- Any gaps will be identified and should inform an NSO strategic plan
- The online version of the Maturity Matrix will also provide a list of training resources that can be used to bridge existing gaps

# NSO Maturity Matrix

## Results

You have completed the assessment!

[Email Report](#)

### Legal & Policy Framework



### IT Infrastructure

### Human Resources

### Application

■ Target Score
 ■ Self-assessed score
 ■ Self-assessed score (goals achieved)

## Recommendations

[View Results](#)

Below you may find training opportunities that could be useful if, for any aspect of a dimension, your organization's current maturity does not match its goal.

### Legal & Policy Framework

3 Courses

#### Ethics and Integrity at the United Nation

[Launch Course](#)

Pursuant to the Ethics Office's mandate to strengthen an ethical culture throughout the Organization, the purpose of the online training is to promote ethical awareness and ethical-decision making so...

[read more](#)

#### UNDP Policies and procedures

[Launch Course](#)

The Programme and Operations Policies and Procedures (POPP) provide operational standards and procedural guidance on core business processes. The POPP is almost entirely accessible to the public. You...

[read more](#)

#### UNDP Accountability Policies and procedures

[Launch Course](#)

At UNDP, evaluation is critical in helping countries achieve the simultaneous eradication of poverty and significant reduction of inequalities and exclusion. By generating objective evidence, evaluati...

[read more](#)

### IT Infrastructure

## Big Data training catalogue

- Competency framework, Maturity Matrix and Curriculum Development are supported by the development of a Big Data Training Catalogue
- Includes training courses and materials
  - Developed by UNCEBD task teams and other entities
- Will support individual development

Big Data Training Catalog


Catalog

Personal Learning Path

Course evaluations

About

Contact



## Keyword search

Enter keywords to search for relevant courses/materials. Leave the field blank to show all courses/materials.

ID	Title	Provider	Language	Details	Link
1	Gobernanza de datos personales en la era digital	Pontificia Universidad Javeriana (JaverianaX)	Español	<a href="#">Details</a>	<a href="#">Link</a>
2	Data Privacy Fundamentals	Northeastern University	English	<a href="#">Details</a>	<a href="#">Link</a>
3	Privacy Law and Data Protection	University of Pennsylvania	English	<a href="#">Details</a>	<a href="#">Link</a>
4	Security and Privacy for Big Data - Part 1	EIT Digital	English	<a href="#">Details</a>	<a href="#">Link</a>
5	Security and Privacy for Big Data - Part 2	EIT Digital			
6	Data Science Ethics	University of Michigan			
7	Cloud Data Security	University of Minnesota			
8	Privacy and Standardisation Specialization	EIT Digital			
9	Understanding the GDPR	University of Groningen by FutureLe			

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Big Data Training Catalog

Catalog

Personal Learning Path

Course evaluations

About

Contact

Welcome

Course options

Personal profile

## Welcome to the Personal Learning Path

- To the left you will see some options. This is where we build your personal profile. Please follow the steps below.
- First you select what kind of user you are (e.g. "Manager" or "Data Scientist").
- Next you must identify which core skills you are looking to learn about.
- Next you need to assess your level of knowledge in your selected core topics and select from the available options. If you are already at the "Advanced" level, no courses will be available to guide you further.
- Next, using the same skill level scale, enter what level you would like to achieve by the end of this training.
- Click Search

Once you have filled out this personal profile and clicked Search, your results will appear in the "Course options" tab. From here you will be able to select courses for your personal profile.

Which of the below options best suits your role?

None

Which skill are you looking to improve?

None

How would you rate your current knowledge in this area?

None

What level of knowledge are you aiming for?

None

Search

Thank you