JRC TENDER
Kick-off meeting
Seville – 21st February 2019

"Compilation of tasks data and development and testing of a tasks questionnaire"
Work plan, JRC-Eurofound framework discussion and data-related issues

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EUROPEAN COMMISSION

1. *Project aims, work plan and deliverables*

2. *Discussing the Eurofound-JRC task framework*

3. *INAPP's main data sources for this project – The Italian O*Net 'Indagine Campionaria sulle Professioni'*

4. *Proposals to refine/enrich the JRC-Eurofound framework*

1. *Supporting the JRC team in revising/enriching the JRC-Eurofound framework wrt the list of dimensions reported at the end of this presentation (WP 1 – INAPP and UNICATT)*

2. Realizing the four national task database (occupation-sector level) comprising the (enriched/revised) list of JRC-Eurofound indicators, reaching the highest possible level of disaggregation and maximizing cross-country comparability (WP 2 – INAPP, IER, PFU & BIBB)

3. Assisting the JRC team in developing and testing the task-based model questionnaire: items revision, translation and testing with at least 10 interviews (WP 3 – INAPP, IER, PFU & BIBB)

4. *The revision of the framework and the initial report (WP1) will be realized by INAPP supported by UNICATT, however all feedbacks and contributions provided by IER, PFU and BIBB will be more than welcome and of course taken into account*

Workplan and Deliverables

1. **Deliverable 1** – *Report including feedback and input on the revised version of the JRC-Eurofound framework* **[INAPP supported by UNICATT >> due within 21/04/2019]**

2. **Deliverable 2** – *Four national task database* **[INAPP, IER, PFU & BIBB >> due within 21/07/2019]**

3. **Deliverable 3** – *Technical reports illustrating the four national task database* **[INAPP, IER, PFU & BIBB >> due within 21/07/2019]**

4. **Deliverable 4** – *Four translated versions of the model questionnaire on tasks* **[INAPP, IER, PFU & BIBB >> due within 21/09/2019]**

5. **Deliverable 5** – *Technical reports on the model questionnaire* **[INAPP, IER, PFU & BIBB >> due within 21/01/2020]**

1. ***Kick off meeting, Seville 21-22 February 2019 –*** *Framework discussion, identification of national database and variables to be used, setting-up the agenda*

2. ***Interim meeting (VC), 21 July 2019*** *– Discussing the progress in the costruction of the national task database + discussing/finalize the drafting of the model questionnarie on task prepared by the JRC team*

3. ***Final meeting, Seville mid-December 2019*** *– Discussing the final draft of all the deliverable envisaged by the JRC tender*

✓ *Need to carefully discuss and make explicit national level database characteristics, availability, unit of observation/level of disaggregation, time structure, relevant variables, degree of cross-country comparability*

✓ *Need to make explicit the availability (for all countries included in the project) of information (variables) apt to properly reproduce the elements included in the revised JRC-Eurofound framework*

✓ *Need to conform to the EC-JRC's graphical and drafting requirements as reported in the tender's Technical specification (par. 11)*

Task-based approach

➢ *à la* Autor view (from SBTC to RBTC):
1. Tasks as units of work activity producing output
2. 'Technical view' of production → mechanical process of transforming inputs into outputs
3. Tasks as discrete units of work
4. Depending on what is techologically feasible, a task will be performed by the cheapest factor (human or machine) → production function view (Neoclassical framework)

➢ Critical omissions:
1. **Absence of human agency** → some insights from the capability approach (*knowledge accumulation / codifiability of tasks / extraction of knowledge / specific versus general knowledge*) → Evolutionary theory

2. **Social aspects of the production process** (flexibility and adaptability – social skills allowing for value extraction) → value extraction can be achieved by cooperation and consent or coercion

Brief discussion of the reference framework

Tasks as **units of work** activity producing output

Jobs as **bundles of tasks**, but also positions within the social structure of productive organizations

Tasks **socially embedded** reflecting the structure of consuption of society (public/private provision of services)

What is a job? → Multidimensional concept → not only bundle of tasks

Identification of a number of task categories relevant to understand recent developments of labour demand and structural changes in employment:

1. Technological *mainstream* studies → **cognitive** and **routine** tasks as main dimensions + **secondary tasks categories** → interactive (managerial)/service/ manual (*RBTC*)

2. Organizational literature → autonomy/communication/cooperation with colleagues/ problem-solving activities

3. Trading tasks literature → role of routine and social interactions

CONTENT OF TASKS and **METHODS AND TOOLS**

CONTENT OF TASKS and **METHODS AND TOOLS**

What is being produced or transformed in the production process → highly dependent on structure of demand (NACE economic sector)

Referring to **social organization of production** → historically and institutionally contingent → division of labour and work organization

1. Production good firms → machines
2. Consumption good firms → consumption goods

1. From *Taylorism* to *Just-in-time*
2. *Lean* production?

KEY DOMAINS IN THE JRC-EF FRAMEWORK

- ✓ **Physical [Strength, dexterity]**
- ✓ **Intellectual [Business, technical, accounting, analytic, info gathering, creativity]**
- ✓ **Social [Serving, selling, teaching, managing]**
- ✓ **Methods [Autonomy, teamwork, repetitiveness, standardization]**
- ✓ **Tools [Machines, basic IT, programming]**

- **Our key task:**

Providing comparable country-level indicators capable of soundly capturing (at the highest possible level of occupation-sector disaggregation) such dimensions

- **Plus:**

Detailing/refining the existing dimensions and adding additional ones given todays' discussion (some proposals in what follows) and data availability

The Italian O*Net – 'Indagine Campionaria sulle Professioni':

- Aims: 'scanning' Italian occupations providing information on task, skills, work attitudes, workplace characteristics at the maximum level of detail (5th digit of the ISTAT occupation classification – CP2011);

- Sample and frequency: **16.000 workers** representing the whole set of Italian occupations. On average, **20 workers** are interviewed in 2007, 2012 and 2019 (ongoing) for each 5-digit ISTAT occupation;

- "Two-stage" sampling strategy:
  1 - First stage → Initial list of companies extracted (from all registers suitable for this purpose as ASIA, ad hoc archives, Orders members) relying on a large occupation-sector matrix and stratifying according to economic activity, size and geographical location.
  2 – Second stage →Transmission of the list to the Contact Center that, in turn, contacts companies managers asking for the presence of a specific 5-digit occupation to be interviewed;

- Methodology: **1-hour face-to-face interviews with specialized operators** - CAPI (Computer Aided Personal Interview), crucial role of interviewers inducing interviewees to answer 'on behalf of their occupation',

Integrability with other data sources

The ICP can be easily integrated (via the CP2011 occupational code) with other data sources

- ✓ ISTAT RFCL (Rilevazioni Continua sulle Forze di Lavoro) providing information on employment, wages, education, gender, age, type of contract (temporary, part time, autonomous, indeterminate) and many other important dimensions

- ✓ ASIA and AIDA-BvD archives: providing a large number of information on companies – i.e. economic variables (balance sheet information) for all Italian enterprises (excluding micro and small firms)

- ✓ Atlante Lavoro INAPP (freely available online): reporting extremely granular information on productive processes and sequence of tasks performed by workers again relying on the CP2011 (as well as on the ATECO 5-digit classification)

- ✓ RIL – Rilevazione su Imprese e Lavoro

- ✓ PLUS 2018 – section "Tecnologia"

The ICP structure

- 10 Thematic sections on abilities, generalized work activities, knowledge, skills, work context and style

- More than 200 variables

- **Answers provided on a double 'intensity scale': importance and complexity**

- Unit of observation → **Professional Unit → set of homogeneous professions compared to the knowledge, skills, abilities and work activities carried out (V digit CP – Classificazione Professioni ISTAT)**

- The O*Net conceptual pillars:

Workers characteristics: what characterizes individuals in a specific occupation in terms experience, knowledge endowment, values, attitudes, etc.

Occupation characteristics: what is asked (in terms of formalized and not-formalized competences, technical skills, attitudes etc) to perform such occupation

Occupation-related workplace characteristics: in a broad sense, all distinctive elements (technological, institutional, organizational) concerning the context where a specific occupation operates

Mapping dimensions with Italian ICP Indagine Campionaria sulle Professioni

Workers characteristics:
what characterizes individuals in a specific occupation in terms experience, knowledge endowment, values, attitudes…

Occupation characteristics:
competences, technical skills, attitudes) to perform such occupation

Occupation-related workplace characteristics
technological, institutional, organizational concerning the context where a specific occupation operates
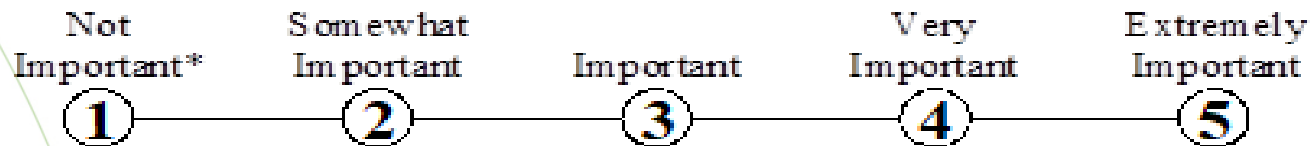
Section	Contents
A – Introduction	General info on workers (i.e education level), occupations (i.e. distinctive task and characteristics) and work context (i.e. relevant info on technology).
B – Knowledge	33 knowledge items
C – Skills	35 items on skills
D – Attitudes	52 items on attidues
E – Values	21 items on values
F – Work styles	16 items on work styles
G – Tasks (general)	41 items on tasks
H – Working conditions	57 items on working conditions
I – Tasks (detailed)	Detailed qualitative info on tasks

Answers provided on a double 'intensity scale': **IMPORTANCE** and **COMPLEXITY/FREQUENCY**
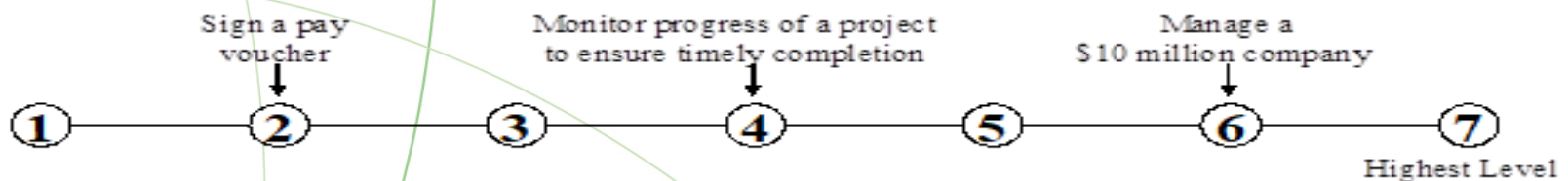
1. **Administration and Management**	Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

A.How _important_ is ADMINISTRATION AND MANAGEMENT knowledge to the performance of *your current job*?

Not Important*	Somewhat Important	Important	Very Important	Extremely Important
①	②	③	④	⑤

B.What _level_ of ADMINISTRATION AND MANAGEMENT knowledge is needed to perform *your current job*?

Sign a pay voucher → ②
Monitor progress of a project to ensure timely completion → ④
Manage a $10 million company → ⑥

① — ② — ③ — ④ — ⑤ — ⑥ — ⑦
Highest Level

Answers provided on a double 'intensity scale': **IMPORTANCE** and **COMPLEXITY/FREQUENCY**

- **Importance scale**:

Item (example, sec. B)	Strongly disagree	Disagree	Nor agree neither disagree	Agree	Strongly agree
Workers belonging to this occupation use all their relevant abilities	1	2	3	4	5

- **Frequency scale**:

H.2 (example) – How often your occupation requires speaking in public?

Never	One or more than one time/year	One or more than one time/month	One or more than one time/week	Every day
1	2	3	4	5

Using the ICP to build JRC-EF type indicators

1. **Physical Tasks** (physical manipulation and transformation of material things...)

Strenght → «tasks requiring exertion of energy and strengh»

Strenght →
D32 Forza statica – Static strength - The ability to exert maximum muscle force to lift, push, pull, or carry objects

D33 Forza esplosiva – Explosive strength - The ability to use short bursts of muscle force to propel oneself (as in jumping or sprinting) or to throw an object

D34 Forza dinamica – Dynamic Strength - The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.

D35 Forza del busto – Trunk Strength - The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without "giving out" or fatiguing.

D36 Resistenza – Stamina - The ability to exert yourself physically over long periods of time without getting winded or out of breath.

Using the ICP to build JRC-EF type indicators

1. **Physical Tasks** (physical manipulation and transformation of material things…)

Dexterity → «tasks requiring a fine physical skill and coordination»

D22 Fermezza braccia-mani - Arm-Hand Steadiness

D23 Destrezza delle mani – Manual Dexterity

D24 Destrezza delle dita – Finger Dexterity

D25 Precisione – Control Precision

D26 Coordinazione multipla degli arti - Multilimb Coordination

D27 Orientamento alla risposta – Response Orientation

D28 Adattare movimenti – Rate Control

D29 Reattività – Reaction time

Using the ICP to build JRC-EF type indicators

1. **Intellectual tasks** (manipulation and transformation of information and the active resolution of complex problems…)

✓ **Information processing**

Literacy →
D1 Comprendere comunicazioni in forma orale (Oral Comprehension)
D2 Comprendere comunicazioni in forma scritta (Written Comprehension)
D3 Esprimersi in forma orale (Oral Expression)

Numeracy →
D12 Ragionamento matematico (Mathematical Reasoning)
D13 Confidenza con i numeri (Number Facility)
C5 Matematica
C6 Scienze

✓ **Problem-solving**

Information-gathering and evaluation of complex information →
D15 Rapidità nel giungere ad una conclusione (speed of closure) / D16 Flessibilità nel giungere ad una conclusione (flexibility of closure) / G9 Analizzare dati o informazioni (analyzing data or information)

Creativity and resolution →
C7 Pensiero critico (critical thinking) / **G10 Prendere decisioni e risolvere problemi (making decisions and solving problems) / G 11 Pensare in modo creativo (thinking creatively)**

Using the ICP to build JRC-EF type indicators

1. **Social tasks** (interaction with other people…)

Serving / Attendig →
B5 Servizi ai clienti e alle persone – Attending clients
H8 Quanto è importante interagire con i clienti esterni o pubblico? - In your current job, how important are interactions that require you to deal with external customers (as in retail sales) or the public in general (as in police work)?

Teaching / Training / Coaching →
G35 Formare ed insegnare - Training and Teaching Others

Selling/ Influencing →
G30 Vendere merci o influenzare gli altri - Selling or Influencing Others
G31 Risolvere controversie e negoziare con altre persone - Resolving Conflicts and Negotiating with Others
G32 Lavorare a contatto diretto con il pubblico o esibirsi - Performing for or Working Directly with the Public

Managing / Coordinating →
G28 stabilire e mantenere relazioni interpersonali - Establishing and Maintaining Interpersonal Relationships
G33 Coordinare il lavoro e le attività di altri - Coordinating the Work and Activities of Others

Using the ICP to build JRC-EF type indicators

1. **Methods** (forms of work organization used in performing tasks…)

Autonomy →

H52 Quanto è libero di definire compiti, priorità e obiettivi del suo lavoro - How much freedom do you have to determine the tasks, priorities, or goals of your current job?
H48 Nel suo lavoro quanto è libero di prendere decisioni senza supervisione? - In your current job, how much freedom do you have to make decisions without supervision?

Teamwork →

H7 Quanto è importante nello svolgimento del suo lavoro interagire in prima persona con i colleghi di lavoro o far parte di gruppi di lavoro o squadre? -How important are interactions that require you to work with or contribute to a work group or team to perform your current job?
F7 Lavoro di gruppo

Routine →

H49 Quanto è automatizzato il suo lavoro? - How <u>automated</u> is *your current job*?
H42 Nel suo lavoro per quanto tempo esegue lavori ripetitivi? - How much time in your current job do you spend making repetitive motions?

2. Tools (The type of technology used at work)

Machines→
G20 Manovrare veicoli, mezzi meccanici o attrezzature

Information and communication technologies →
G19 Lavorare con i computer/H4 Uso di posta elettronica

Further dimensions

CONTENT OF WORK

Navigation (moving objects or oneself in unstructured and changing spaces) →
D18 Orientamento nello spazio - Spatial orientation / D19 Visualizzazione - Visualization

Visual and/or audiotory processing of uncodified/unstructured information →
D19 Visualizzazione / D20 Attenzione selettiva (Selective attention)/ D48 Sensibilità dell'udito (Hearing Sensitivity) / D49 Attenzione uditiva (Auditory Attention)

Planning →
G14 Pianificare il lavoro e le attività /G15 Organizzare, pianificare e dare priorità al lavoro

Providing for the welare systems of others → **G29 Assistere e prendersi cura di altri (*split in public/private provision)**

Further dimensions

METHODS AND TOOLS

Autonomous (robots) → List of activities (I) – CPI 2011

Attrezzare o preparare le macchine e i robot (avviare e spegnere i robot, programmare le lavorazioni dei robot, ecc.) → CPI 2011: 7.1.7.1.0

Controllare i parametri di funzionamento dei robot → CPI 2011: 7.1.7.1.0

Ripristinare le macchine e i robot in caso di interruzione e intervenire sulla linea in caso di guasti meccanici → CPI 2011: 7.1.7.1.0

Refining/enriching the JRC-EF framework

High Performance Work Practices – HPWPs
Knowledge extraction/ value creation
Job Rotation → E5 (Chi svolge questo lavoro è occupato ogni giorno in attività diversificate)
Implementation of de-hierarchization practices / decentralization of autority
Job career → E9 (Chi svolge questo lavoro ha possibilità di fare avanzamenti di carriera)
Teamwork → F7 (Lavoro di gruppo)

Power and Control
Autonomy vs. Discretion→E19 (Chi svolge questo lavoro può sperimentare le proprie idee) / E20 (Chi svolge questo lavoro pianifica le proprie attività con poca supervisione) / E21 (Chi svolge questo lavoro può prendere decisioni autonomamente)
Job monitoring →
Data collection on workers' performance →

Saturation of working time
Management of internal and external working time

Versatility of tasks
Task dimensions specific to a few occupations or present in a majority of jobs

Degree of specialization/ diversification
To what exent occupations are diversified/ specialized in terms of tasks (quality and quantity of tasks by occupation)

Thank you for your attention
and looking forward for feedbacks and discussion!!

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