

*Workshop 3*  
**HR policies & management**

# **Computer-based Tests in EPSO**

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Sofia, 26 February 2016



# The European Union



Commission



CONSILIUM  
Council



Parliament



Court of Justice



Court of Auditors



Economic &  
Social Committee



Committee of  
the Regions



Ombudsman



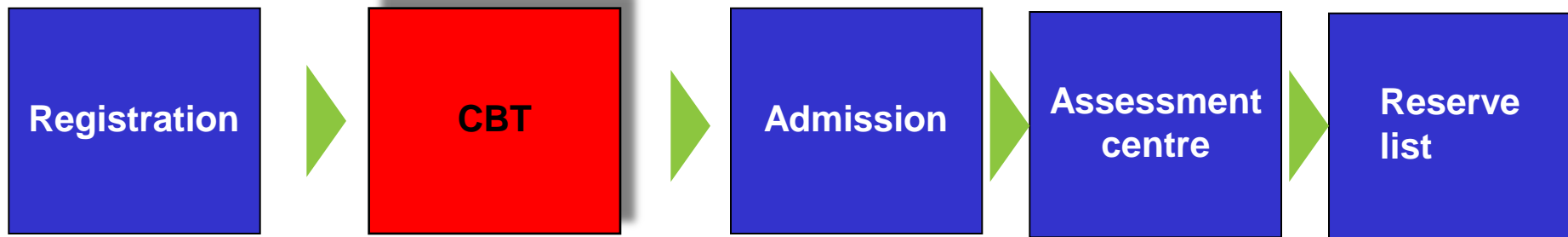
Data Protection  
Supervisor

eu  
careers

# Entry Streams

- **Administrators (AD)**  
e.g. policy officers, lawyers, auditors, scientific officers, translators, interpreters, communication & press officers ...  
Qualification: University degree (bachelor)
- **Assistants (AST and AST-SC)**  
e.g. secretaries, HR assistants, financial assistants, conference technicians ...  
Qualification: Secondary education (at least) and relevant professional experience

# Where in competition procedure?



# What are the main advantages of the CBT system? (1)

- **More flexibility** for candidates
- **More cost/efficient** for EPSO  
(reusable questions)
- **Faster procedure** for ALL  
(overlapping events)



# What are the main advantages of the CBT system? (2)

- **Improved image**
- **Well established process**
- **High security**
- **New types of tests**

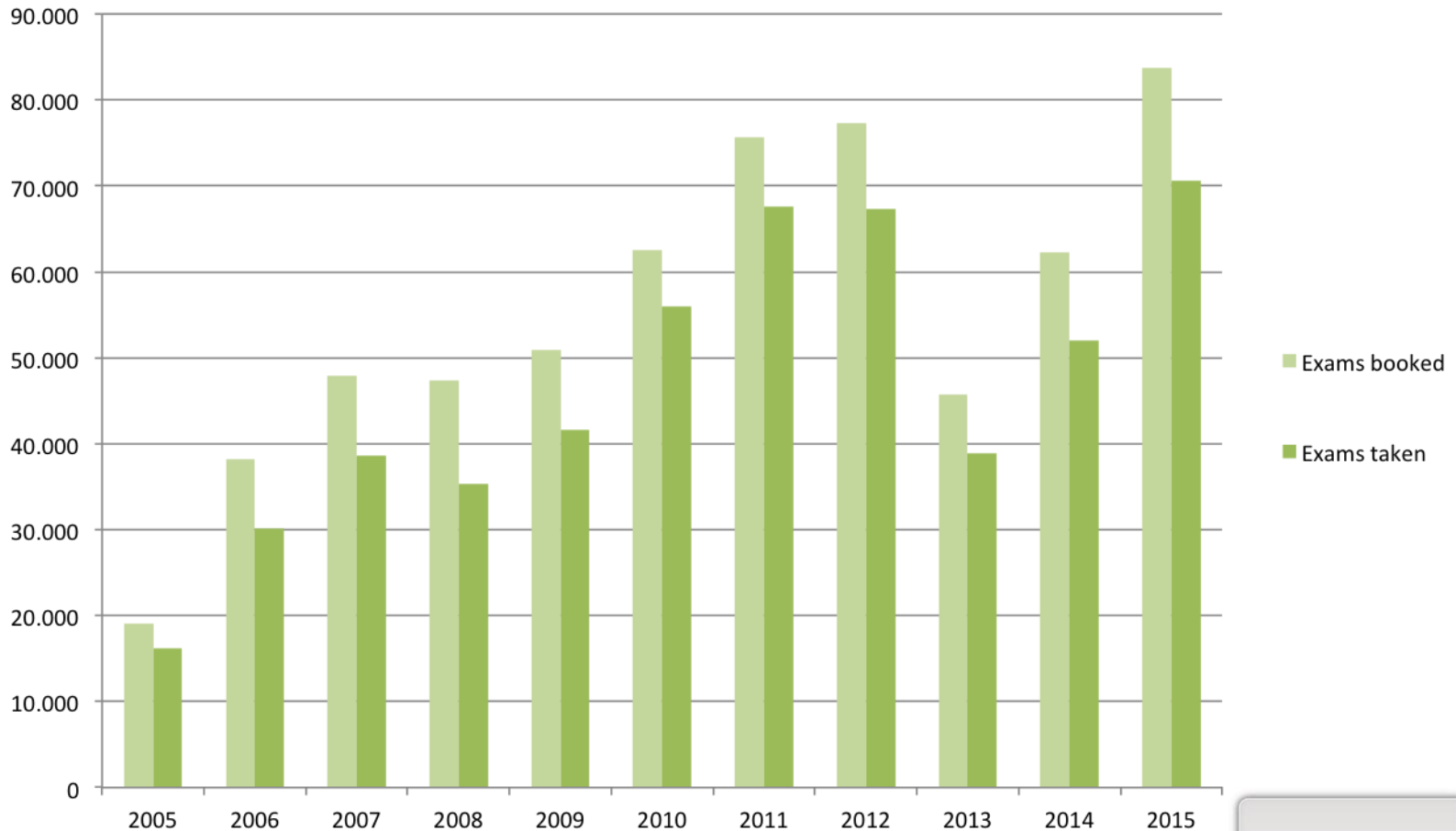


# A few figures about CBT (1)

- > 510,000 exams delivered since 2005
- > 350,000 exams delivered under the new selection model (since 2010)
- 80.000 items (52.000 active in the item bank): **one of the largest item banks** of its kind in the world
- 15 different exam set-ups in CBT



# A few figures about CBT (2)





# CBT in EPSO competitions

- All test items (i.e. questions) used are exclusive property of EPSO, i.e. not of any external entity
  
- On the basis of proposal by EPSO, the **Selection Board** decides on the content (both *ex-ante and ex-post*) and on the difficulty level

# How to ensure confidentiality?

- Formal **written commitments**
  - Stakeholders: confidentiality notes
  - Contractors: specific contract clauses
- **Restricted access** to item content (only officials, no temporary staff)
- **Secure transfer** of sensitive data (FTP, USB sticks, encrypted Emails, etc.)

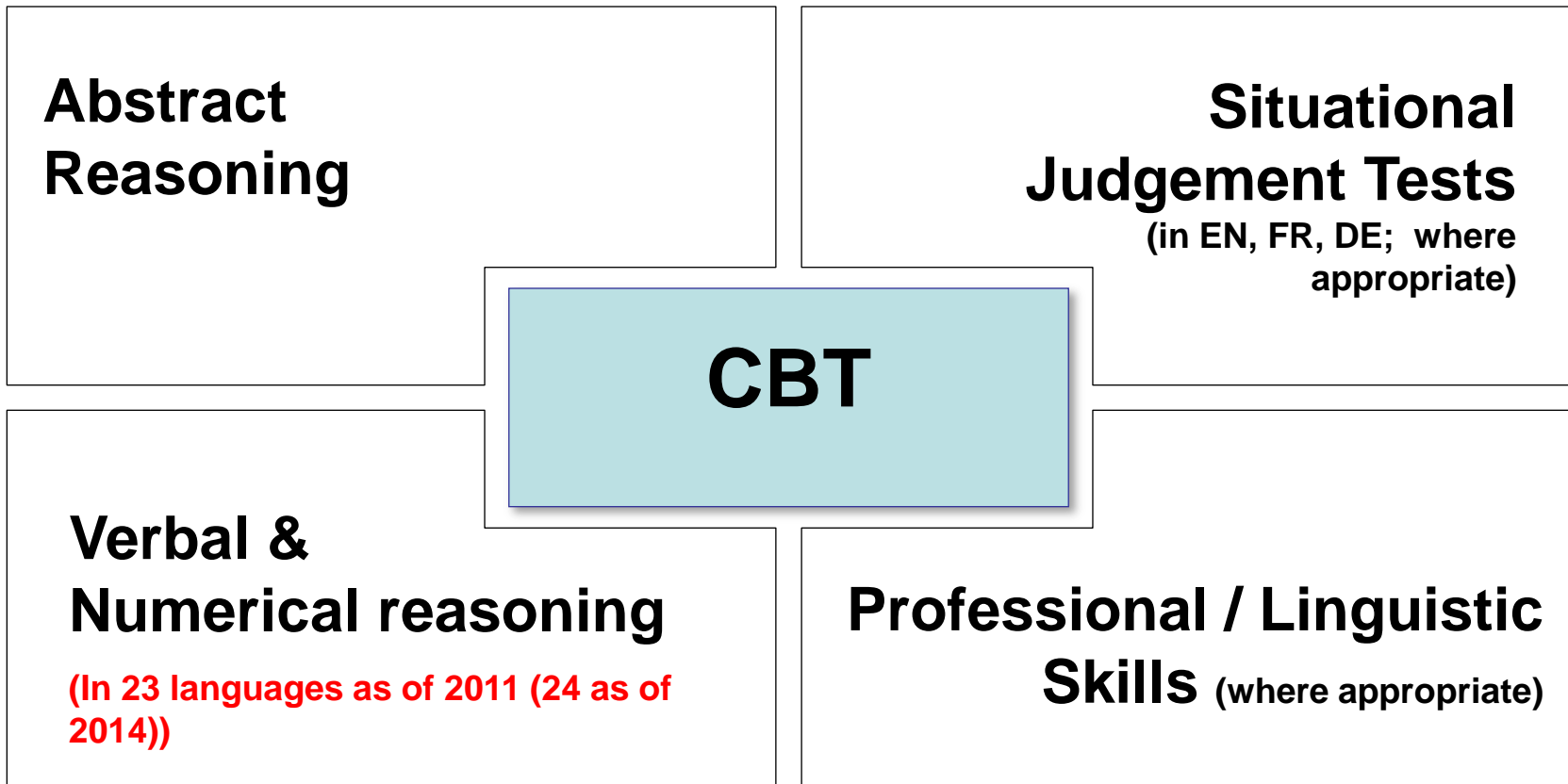
# Role of the Selection Board?

Ex-ante : deciding on the CBT difficulty matrix before the tests and validate content on basis of samples from the pool of questions

Ex-post : handling request for reviews, allow neutralisation (if any) and confirming final results



# EPSO pre-selection phase



# Verbal reasoning test

- The **Verbal reasoning test** enables the objective assessment of the candidate's ability to reason and understand information in verbal format. Each question is based on a textual scenario linked to four different answer options, only one of which is correct.

# Verbal Reasoning (VR) 1/2

# Verbal Reasoning (VR) 2/2

# Numerical reasoning test

- The **Numerical reasoning test** enables the objective assessment of the candidate's ability to reason and understand information in numerical format. Each question is based on a numerical scenario (tables, charts, graphs and including textual instructions ) linked to five different answer options, only one of which is correct.





# Numerical Reasoning (NR) 1/2

# Numerical Reasoning (NR) 2/2

# Abstract reasoning test

- **Detecting and understanding relationships** between concepts
- Test on ability to **think flexibly** and **solve novel problems** (*'fluid intelligence'*)
- Independent of acquired knowledge
- **NO spatial reasoning, verbal/numerical concepts**
- **Timeframe per test: 10 items in 10'**
  
- **Objective, reliable** and **fair** testing tool
- Largely **unaffected** by differences in **ethnicity, education, gender** and cultural background
- A good predictor of future job performance
- **Very good cost-benefit ratio** (e.g. no translation effort)



# Abstract Reasoning (AR) 1/2

# Abstract Reasoning (AR) 2/2

# Situational Judgement Tests (SJT)

- candidate is presented with a variety of situations likely to be encountered 'in the job'
- each situation is accompanied by a number of different responses the candidate could apply to the situation
- candidate is asked to choose what he/she thinks is the **most effective** AND **least effective** response in light of the given scenario
- mapped on EPSO's competency framework

# SJT competencies

(from the EPSO competency framework)

## Analysing & Problem solving

- Identifies the critical facts in complex issues and develops creative and practical solutions

## Delivering Quality & Results

- Takes personal responsibility and initiative for delivering work to a high standard of quality within set procedures

## Prioritising & Organising

- Prioritises the most important tasks, works flexibly and organises own workload efficiently

## Resilience

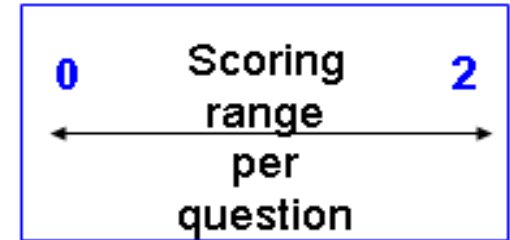
- Remains effective under a heavy workload, handles organisational frustrations positively and adapts to a changing work environment

## Working with Others

- Works co-operatively with others in teams and across organisational boundaries and respects differences between people

# SJT sample item

You have recently been appointed to a position in a new project team. Although you are experienced in the technical aspects of the job, there are aspects of the work that you need to understand. Your job will eventually require internal liaison and collaboration with other project teams. Although your manager has proposed an induction and training period for you, many of the issues you are responsible for require urgent attention.



- a. Immediately arrange meetings with those individuals you feel you will need to work with. (Most effective)
- b. Quickly try to establish how your objectives will relate to your project manager's objectives. (Neutral)
- c. In the initial stages, make sure that you are doing your job as you understood it from the job description. (Least effective)
- d. Spend time building your understanding of the team's objectives for the future. (Neutral)

Most      Least

1	<input checked="" type="radio"/>	<input type="radio"/>	0
0.5	<input type="radio"/>	<input type="radio"/>	0.5
0	<input type="radio"/>	<input type="radio"/>	1
0.5	<input type="radio"/>	<input checked="" type="radio"/>	0.5



# CBT Item bank: professional psychometric testing

- all questions provided by specialised companies (in EN)
- Translation done in-house (DGT) into all EU official languages (VRT/NRT)
- rigorous internal quality control
- in-depth item performance analysis



# Item performance analysis

- **Outcome:**

- template for permanent item monitoring
- optimal calibration of test items
- ensure 100% equal treatment of all groups of candidates

# Psychometrics – item analysis

## sample item profile



# CBT item bank: internal quality control

- all questions provided by specialised companies
- Several layers of rigorous internal quality control **before** delivery
- In-depth psychometric analysis (in-house) **after** each competition based on IRT ("Rasch Model")
- Items showing critical behaviour are flagged and investigated (blocked for delivery)

# CBT back then...and nowadays (1)

## 2005

- MCQ only
- Limited number of tests  
(VR/NR/EU)
- Limited number of test centres within Europe

## Today

- New types of tests (*essay-type, audio-video, e-tray*)
- Variety of tests covering a range of skills (AR, SJT, ACC, PO, Linguistic)
- Worldwide testing covering all continents (EUR 28 + 36 WW locations)



# CBT back then...and nowadays (2)

## 2005

- 3 language regime
- Long process  
*(separated registration/  
Booking/ testing)*
- Rely merely on external expertise

## Today

- 24 languages
- Combined registration/booking/testing
- In-house psychometrics



# THANK YOU!

**Please also check our online IBT  
platform open 24/7**

[http://europa.eu/epso/apply/sample\\_test/index\\_en.htm](http://europa.eu/epso/apply/sample_test/index_en.htm)

