



Exploring the future ATCO skill set.

Skill-up project





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Current ATCO Competences

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From competence to skills

3
03

What will change

4
04

Future skills





What are the current ATCO competences?

SA – Situational Awareness

Comprehend the current operational situation and anticipate future events

CM – Capacity Management

Ensure a safe, orderly & efficient traffic flow & provide essential information on environment & potentially hazardous situations

CR – Conflict Resolution

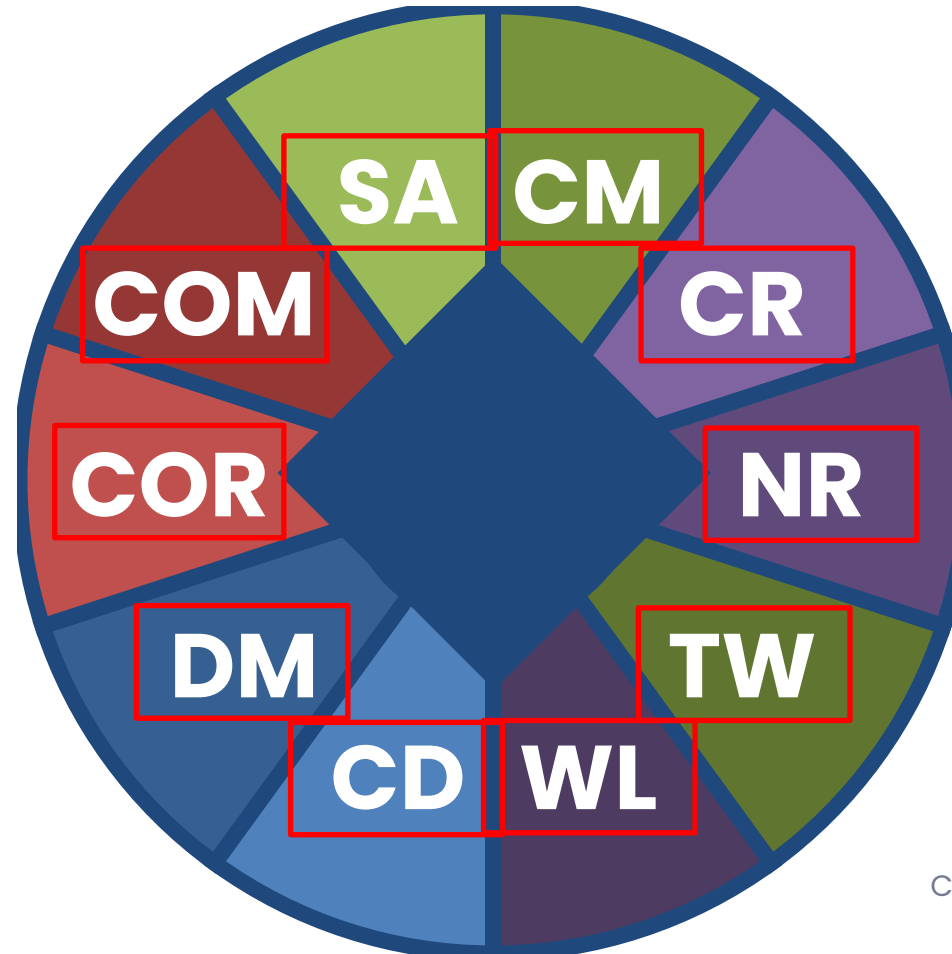
Manage potential traffic conflicts and maintain separation

NR – Management of non-routine situations

Detect and respond to emergency and unusual situations related to aircraft operations and manage degraded modes of ATS operation

TW – Team work

Operate as a team member



ICAO Doc 9868

WL – Workload management

Use available resources to prioritize and perform tasks in an efficient and timely manner

CD – Continuous development

Demonstrate personal attributes that improve performance and maintain an active involvement in selflearning and self development

DM – Decision making

Find and implement solutions for identified hazards and associated risks

COR – Coordination

Manage coordination between personnel in operational positions and with other affected stakeholders

COR – Communication

Communicate effectively in all operational situations.



And the skills?

SA – Situational Awareness

Situational awareness (SA) – 3D intelligence – mental picture

CM – Capacity Management

Work under pressure – Precision – Hi performance driven

CR – Conflict Resolution

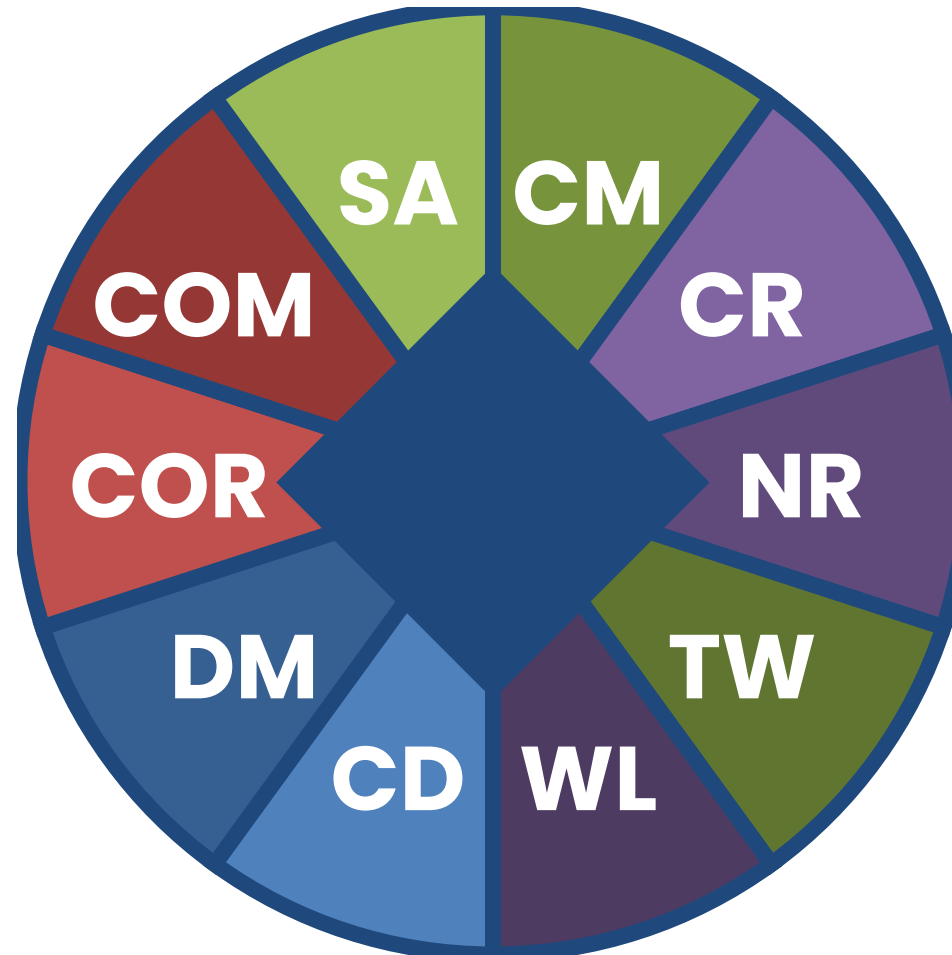
Decision making (DM) skills

NR – Management of non-routine situations

Knowledge of air situations, knowledge of ATM system, decision making, SA, ...

TW – Team work

Human skills



WL – Workload management

Work under pressure – human skills

CD – Continuous development

Professional ethos

DM – Decision making

DM

COR – Coordination

Communication skills + SA

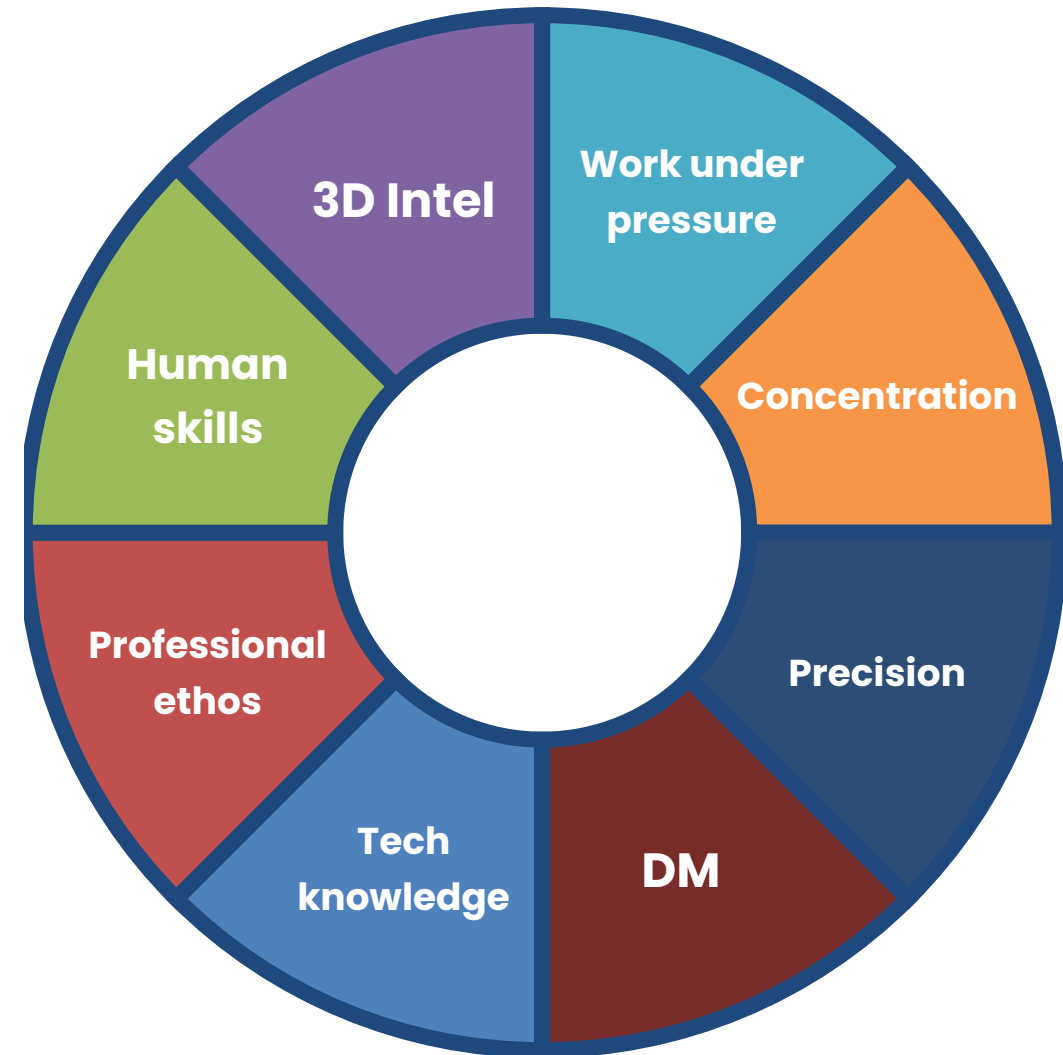
COR – Communication

Communication skills, non technical – human skills.



Skills

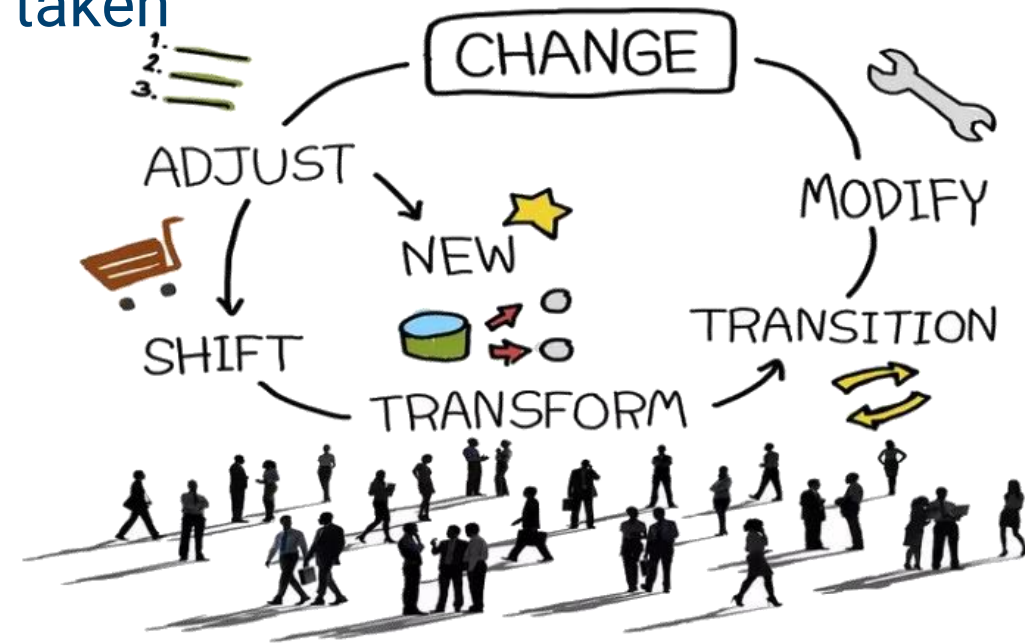
- 3D intelligence
- Work under pressure
- Concentration
- Precision
- Decision making
- Technical knowledge (as a user)
- Professional ethos
- Human skills





What will change?

- Automation will bring further support to decision making
- Delegation of decision making to technical system
- Less linearity or “control” of actions taken
- Shift from control to monitoring
- Other “new” tasks will creep in.





And the consequences of these changes?

- Dependencies on certain decision making skill on the “machine”
 - Certain skill degradation





And the consequences of these changes?

- A salient importance on monitoring the technical part of the system.





And the consequences of these changes?

- Loss of the control over the actions – the time.





New skills for a new operational concept

- Digital competence





New skills for a new operational concept

- Additional **cognitive flexibility** in developing mental-picture – decision making.





New skills for a new operational concept

- Maintenance of mastering of 3D – SA – DM skills with less operational exposure





New skills for a new operational concept

- Continuous development – salient





New skills for a new operational concept

- Discipline in a shared environment





Who are we?

- Specialised company in consultancy and training in Air Traffic Management
- Established experience in ATCO training and future operational concepts.



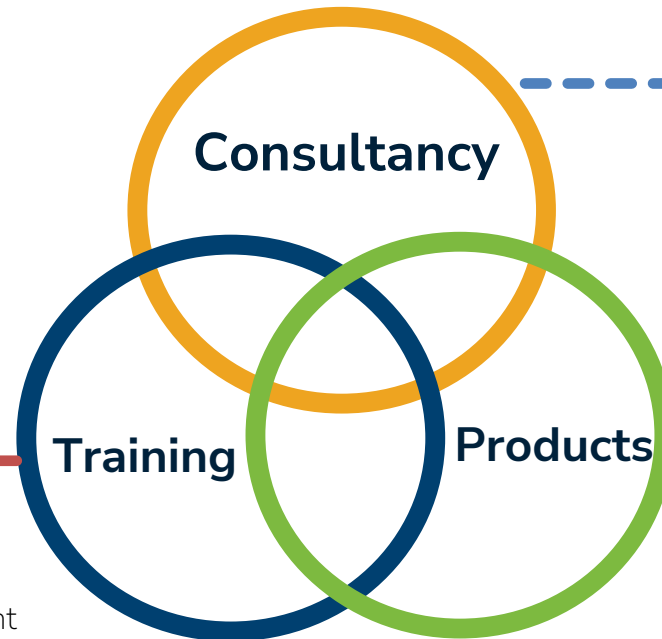
Consultancy

- Aviation Procedure Design
- Safety and Regulation Audits
- Innovative functionality design



Training

- Certified training organization
- Train the trainers
- Human Factors, facilitation and Team Resources Management
- ATM System Training
- Instructors pool



Products

- Air Traffic Controllers Resource Management (ARM) Suite
 - Rostering
 - Competence Management
 - Information dissemination



Thank you.

Avenida del Partenón 10,
MADRID, Spain
www.ingenav.com
Max Bezzina
mbezzina@ingenav.com

