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ESAF/WACAF MET Competency standards for Aeronautical Meteorological Personnel

Aeronautical Meteorological Personnel Competency Assessment and QMS

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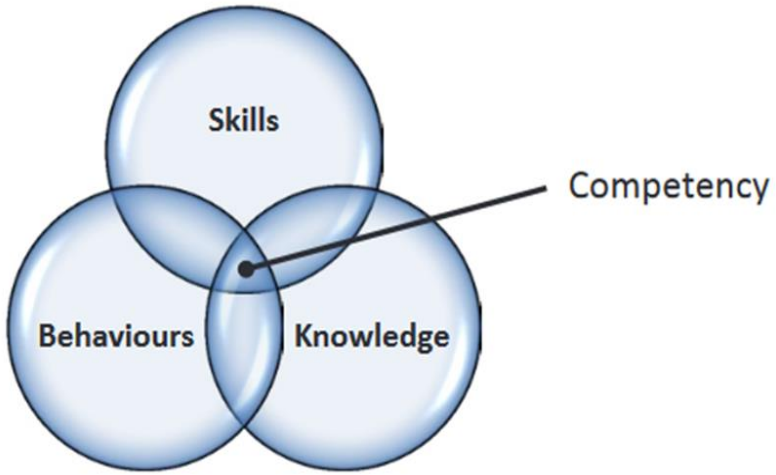
1.0 Definitions

- Technical Regulations, Volume I (WMO-No.49), describes
  - **qualification** as the minimum core knowledge, usually acquired through education, required to enter a profession.

- Technical Regulations, Volume I (WMO-No.49), defines
  - **competency** as the knowledge, skills and behaviours required to perform specific tasks in the fulfilment of a job responsibility .

- Therefore, **Successful attainment of academic qualification**
  - does not mean that an individual is immediately able to competently perform a corresponding job.

1.1 Definitions Cont…



i) Personnel Competency standards
   i) are defined for service areas that are subject to international regulatory frameworks, such as aeronautical meteorological services; and

ii) Competency is a combination of
   i) skills, knowledge and behaviors

2.0 Introduction to Competency Assessment

- Competency assessments are conducted to determine whether AMP can perform their jobs to levels of skill and knowledge required and is critical in implementing competency requirements.

- Under the WMO competency framework, personnel must demonstrate competence by undergoing regular assessment process, using a variety of assessment methods, at specified intervals.

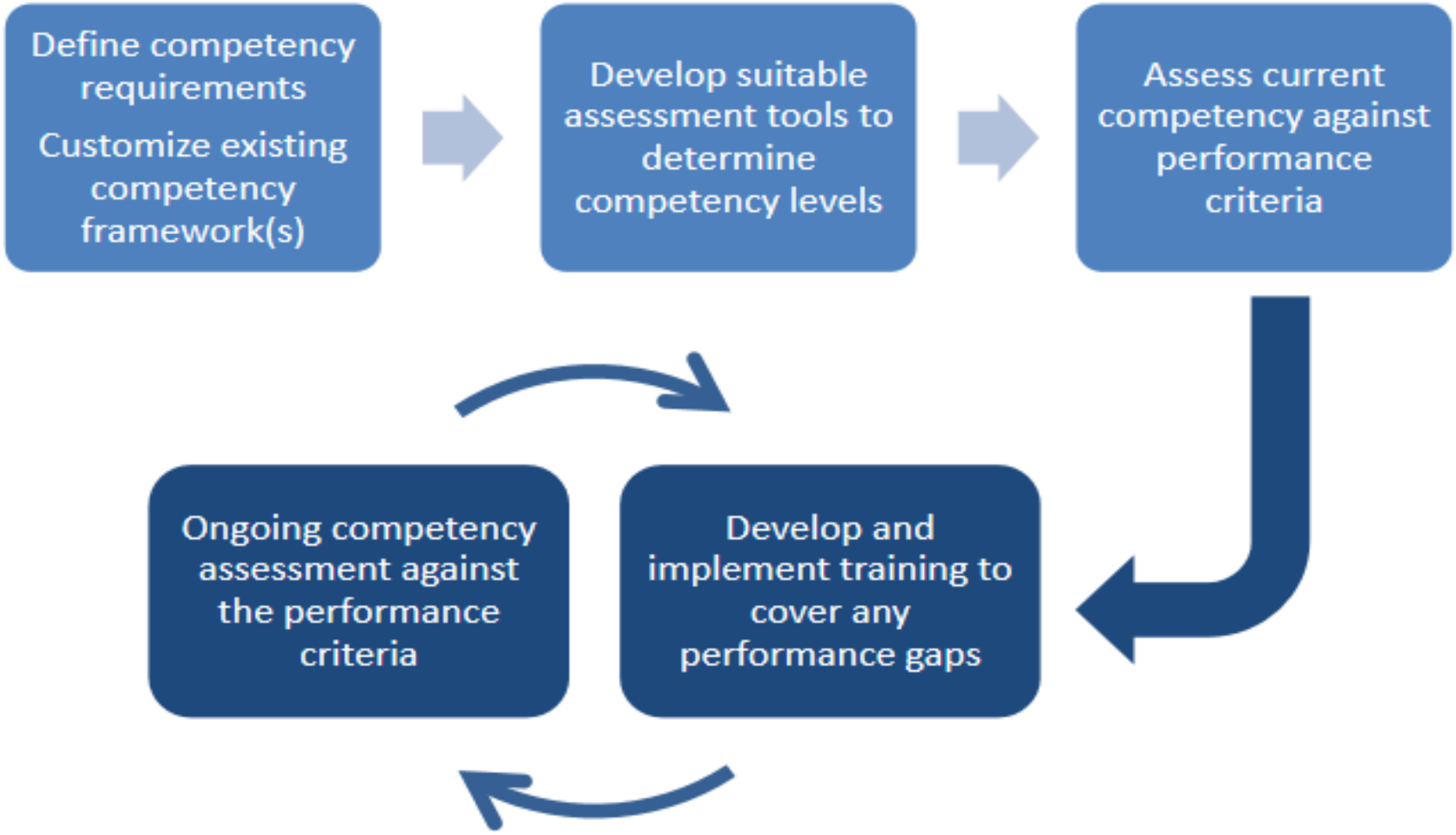
- In some countries, AMP may be reassessed on a six-month or annual basis. In other countries, in-depth reassessment may be undertaken only every five years with less intensive assessment in the interim period.

- NB: It is **important** that the reassessment period is documented and included in the MET service provider (AMSP) Quality Management System (QMS).

2.1 Benefits of adopting a competency framework

- Improves the quality of service provision.
- Promotes national and international consistency.
- Provides clear expectations by defining standards and measures for individuals and teams.
- Assists AMSP meet their operational objectives
- Provides a tool for evaluation by enabling MSP perform a gap analysis on competency requirements
- Enables effective, efficient and targeted training and development of resources;
- Assists AMSP with career and succession planning.
- Assists AMSP with capability development and workforce planning.

2.2 The competency assessment process



2.3 Sample assessment tools applied to different programme areas

	Example A	Example B	Example C
Aeronautical meteorological forecaster	Comprehensive assessment of individual staff members, using a range of tools, such as: – Quizzes and Interviews – Simulations – Workplace observations – Case studies – Portfolio of forecasts	Verification statistics of forecasting skill, with a performance review against competency criteria	Combination of supervisor's reports, self-assessment and portfolio of forecasts or warnings
Climate service personnel	Comprehensive assessment covering verification statistics, portfolio of climate products and a workplace observation	Portfolio of climate products and supervisor's reports	Performance appraisal of personnel against the competency criteria
Observing instrument calibration personnel	Logbook or register of the instruments calibrated, plus practical demonstrations of instrument calibration, and tests of troubleshooting.	Practical demonstrations of an instrument being calibrated	Logbook records of calibrations performed, plus copies of calibration certificates

- Example A may be implemented by an organization with high staff numbers;
- Example C may be implemented by a small organization with limited staff; and
- Example B might lie somewhere in between

2.4 Competency Assessment Process Cont…

- Once AMP undergo competency assessment, they are deemed either **competent** or **not yet competent** for each competency area assessed.
- If assessed as competent, they are issued with a statement listing the **acquired competencies**, as well as any **constructive feedback**.
- If they are deemed **not yet competent**, they should be given clear and constructive feedback on their performance and be provided with **guidance on future options**, including **training and mentoring**, to achieve competency.
- The feedback from the assessment should be **documented** in the MET Service Provider's QMS covering the competency records.

3.0 Principles of competency assessment

Competency assessments must be valid, reliable, flexible as well as fair and assessment decisions **MUST** involve the evaluation of sufficient evidence to enable a fair judgement on competence of candidates.

- **Validity** refers to the extent to which the interpretation and use of an assessment outcome can be supported by evidence.
- **Reliability** refers to the level of consistency and accuracy of the assessment outcomes
- **Flexibility** refers to the opportunity for personnel to negotiate certain aspects of their assessment, (such as timing), with their assessor.
- **Fairness** ensures that assessment does not advantage or disadvantage particular candidates or groups of candidates.

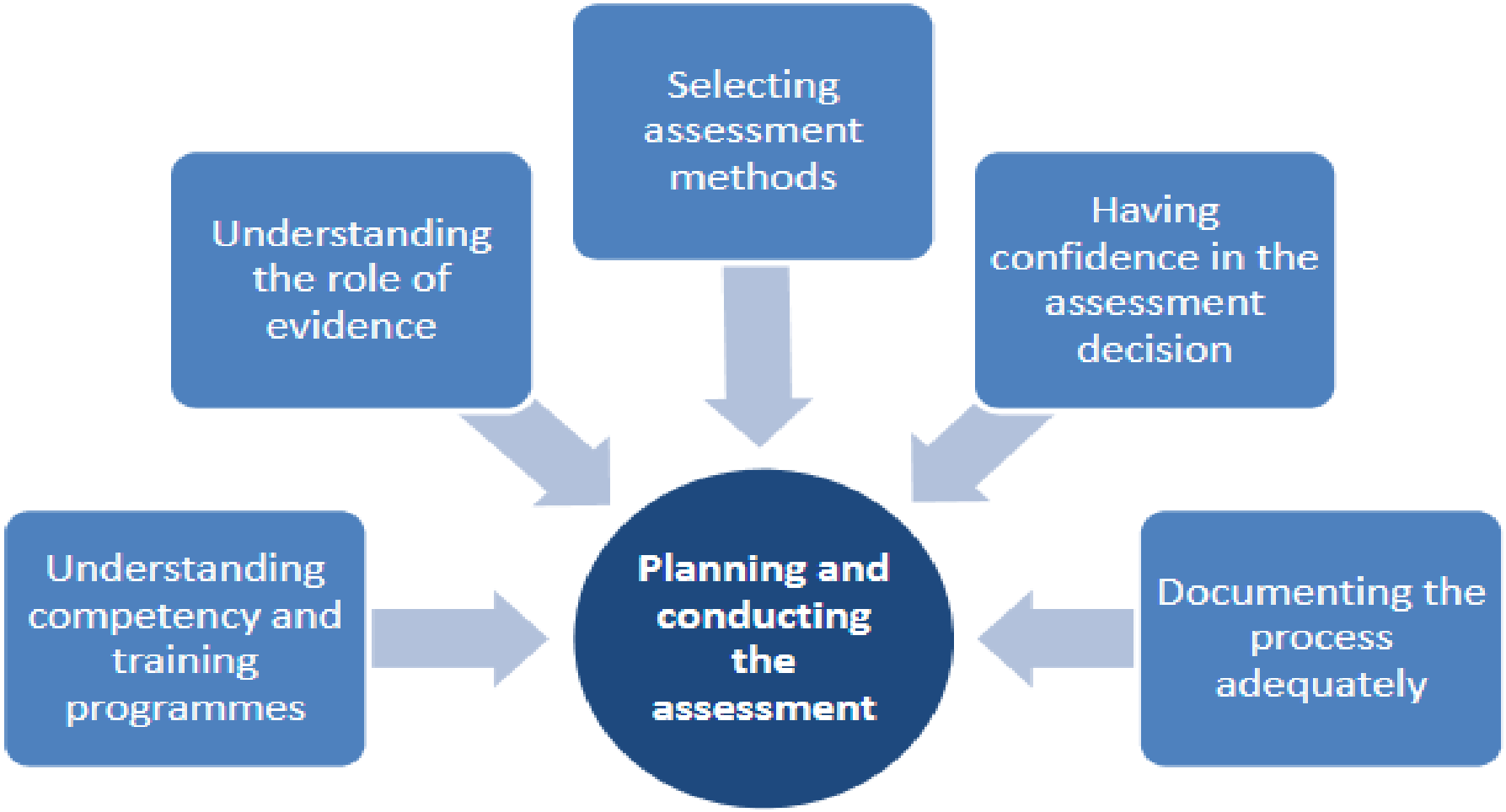
3.1 Principles Cont…

- Competency assessment processes used must:
  - Be consistent with the tasks and standards of the service area;
  - Comply with the relevant assessment guidelines;
  - Use a process that integrates knowledge and skills with their practical application in a workplace task (holistic approach);
  - Target the correct qualification level;
  - Be customizable

4.0 Planning and conducting the assessment

- When planning a competency assessment, the AMSP needs to ensure that:
  - Trained assessors are prepared to conduct the assessment;
  - The assessment tools or materials have been prepared and checked appropriately
  - Assessment procedures is reviewed to ensure that the tasks to be performed reflect workplace requirements;
  - If appropriate, assistance from more experienced assessors or industry experts is sought;
  - The time and place for assessment have been agreed upon with the candidate and other relevant parties;
  - The needs of the candidate have been determined and any reasonable adjustments have been made to the assessment;
  - All appropriate personnel have been advised of the assessment;

4.1 Issues to consider when Planning and Conducting an assessment



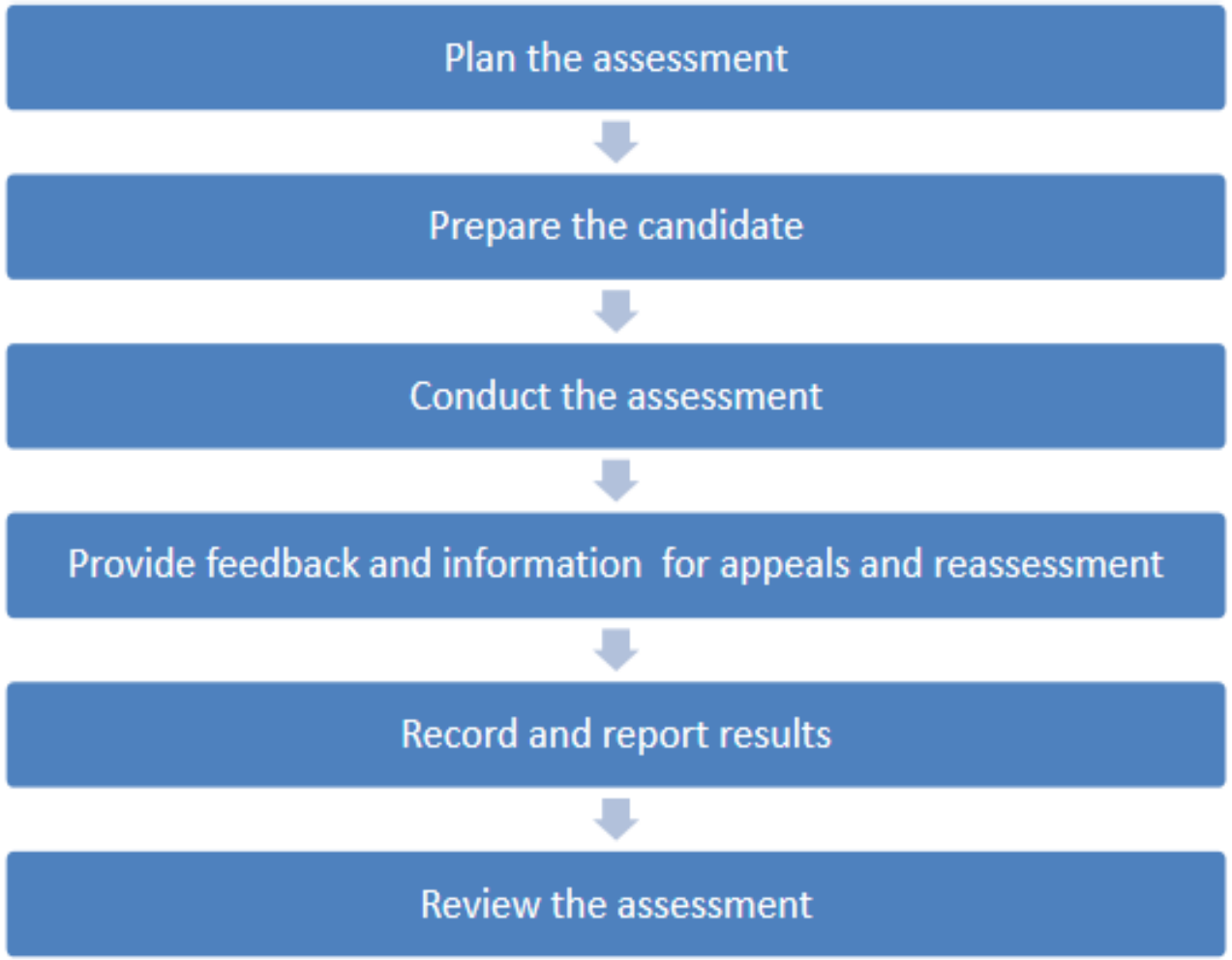
4.2 Selecting a Competency Assessor

- Competency assessments are carried out by a **designated assessor**.
- It is the responsibility of the AMSP to determine the **qualification and competency** requirements of the assessors.
- It is recommended that the assessor has **sufficient experience** in the field in which he/she is assessing, or is trained in using assessment tools created by someone with sufficient experience in the field.
- Assessors are required to have a **high level of interpersonal and communication skills** to enable them liaise with a range of stakeholders affected by the assessment process.

4.3 Desirable characteristics of an assessor

- Desirable characteristics of an assessor include, but are not limited to:
  - **Approachable and friendly**. Assessors should be able to put candidates at ease by creating a non-intimidating assessment environment.
  - **Knowledgeable** or having expertise in the area being assessed.
  - **Perceptive and observant**, able to derive information pertinent to the assessment process and evidence requirements;
  - **Patience**. Assessors require patience in dealing with candidates throughout the assessment process;
  - **Unbiased** and consistent across the assessments, thus ensuring integrity in the assessment decision;
  - **Self-aware**, and able to identify their own biases and sources of frustration
  - **Diplomatic**, able to navigate the complexities of assessment process

4.4 Steps in planning and conducting an assessment



- When conducting the assessment activity, the assessor needs to ensure that:
  - The assessment is conducted in accordance with the assessment plan;
  - Evidence specified in the assessment procedure is gathered using the agreed tools or materials;
  - Evidence is gathered in accordance with reasonable or allowable adjustments where applicable;
  - Evidence is evaluated in terms of validity, sufficiency, currency and authenticity;
  - The assessment decision is made in accordance with the specified criteria;
  - The decision is recorded, in accordance with the AMSP's QMS.

5.0 Competency Assessment methods

- Competency Assessment methods are means of collecting evidence required to demonstrate satisfactory performance.
- In selecting a competency assessment method, we ensure that the method shall provide valid results and its sufficient, current and authentic as described here;

Valid

- Relates to the competency appropriately
- Provides evidence of skills defined in the competency framework

Sufficient

- Provides enough evidence to make a judgement about the competence of the individual
- Meets all the evidence requirements for the competency

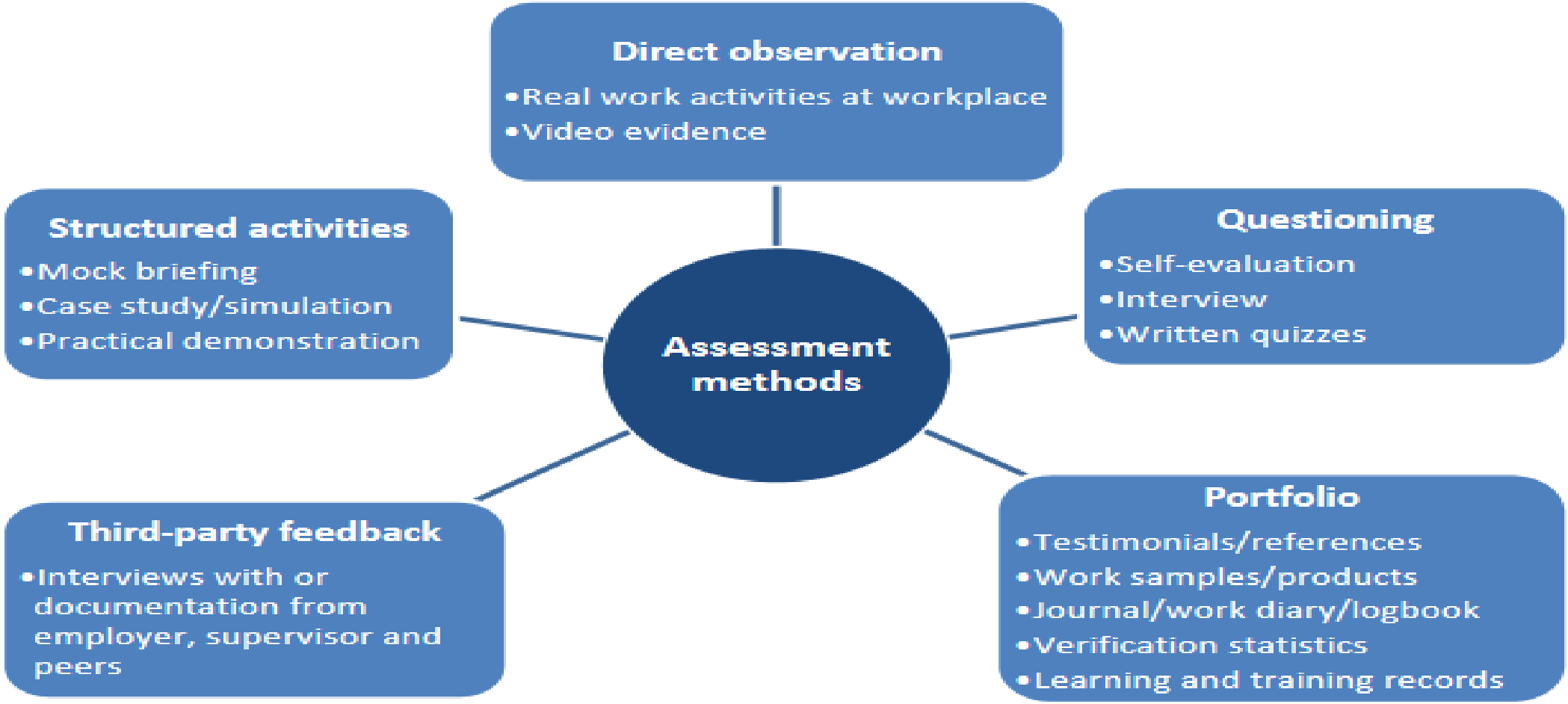
Current

- Is recent enough to show that the skills and knowledge can be applied to a current work situation

Authentic

- Is the candidate's own work (procedures have been developed to ensure this)

5.1 Suggested methods for competency assessment



5.2 Competency Assessment tools

- Assessment tools are the means for **collecting and analyzing evidence of performance** or a document that contains both the instrument and the instructions for gathering and interpreting evidence.
- The tools may include a **profile of acceptable performance and rules** for the assessor.
- Tool may also include **Procedures with information or instructions** given to the candidate and/or the assessor regarding the conditions under which the assessment is to be conducted.
- Assessment tool may include an **assessment matrix** used in competency assessments of Aeronautical Meteorological Personnel (AMP)

5.3 Sample assessment matrix for AMF competencies

		Aeronautical Meteorological Forecaster								
		Quiz on ICAO Annex 3 (I)	Weather hazards quiz (I)	Local procedures quiz (I)	Simulation/Case study (D)	Workplace observation (D)	Supervisor's report (T)	Mock briefing (D)	Portfolio of forecasts/warnings (I)	Logbook (T)
C1. Analyse and continually monitor the weather situation	1.1				x_s	x	x			
	1.2					x	x			
	1.3				x_s	x	x			
C2. Forecast aeronautical meteorological phenomena and parameters	2.1		x_s		x	x			x_s	
	2.2	x				x			x	
	2.3					x			x	
C3. Warn of hazardous phenomena	3.1		x_s		x		x_s		x	
	3.2	x							x	
	3.3								x	
C4. Ensure the quality of meteorological information and services	4.1			x		x				x_s
	4.2			x						
	4.3					x			x	
	4.4			x_s		x				x
C5. Communicate meteorological information to users	5.1					x	x_s	x		
	5.2				x			x		

- Evidence is defined as
  - Direct (D),
  - Indirect (I), or
  - Third-party (T);
  - x denotes the main evidence gathering activity.
  - x_s denotes a supplementary activity required as a backup if sufficient evidence is not collected.

6.0 Providing feedback after competency assessment

- **Deficiencies or issues identified** during the assessment process should be treated sensitively and in confidence.
- Feedback should be provided **directly to the candidate** in a timely fashion, conveyed in an objective and constructive way, whilst allowing sufficient time for candidates to respond.
- Feedback should include **details of assessment outcome**, **reasons for the outcome**, and the **appeal and reassessment** options used in the organization.
- Any **inadequacies** should be communicated in a language that encourages the candidate to engage in a process to achieve competency.

6.1 Providing feedback Cont…

- When recording results, the assessor needs to ensure that:
  - **Assessment results are recorded accurately** and in accordance with national/organizational record-keeping policies and QMS procedures;
  - **Confidentiality** of assessment outcomes is maintained;
  - **Appropriate documentation** is completed.

7.0 Grievance due to the assessment process

- A complaint may be registered by anyone involved in, or affected by, the assessment process. Complaints or grievances may concern, but are not limited to, the following situations:
  - A candidate feels that the assessment process is not being applied fairly;
  - The assessment process presents unacceptable levels of anxiety for the candidate/assessor;
  - A candidate feels that reasonable adjustment has not been applied;
  - The candidate is not adequately informed of the assessment requirements;
  - The candidate/assessor feels they are being subjected to harassment as a direct result of the assessment process;
  - Other personnel in the operational environment are adversely affected by the assessment process;
  - The supervisor is unsatisfied with the administration of the assessments in his/her office.

7.1 Appealing an assessment decision

- Candidates should be given an opportunity to **appeal** assessment decisions. It is the responsibility of the training and assessment division of the AMSP to ensure that an appeals process is in place.

- In case of an appeal, the evidence **MUST** be reviewed to determine whether the assessment decision was fair. Therefore, it is the responsibility of the assessor to ensure that the evidence is kept, in sufficient detail to enable any potential review.

Thank You!

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