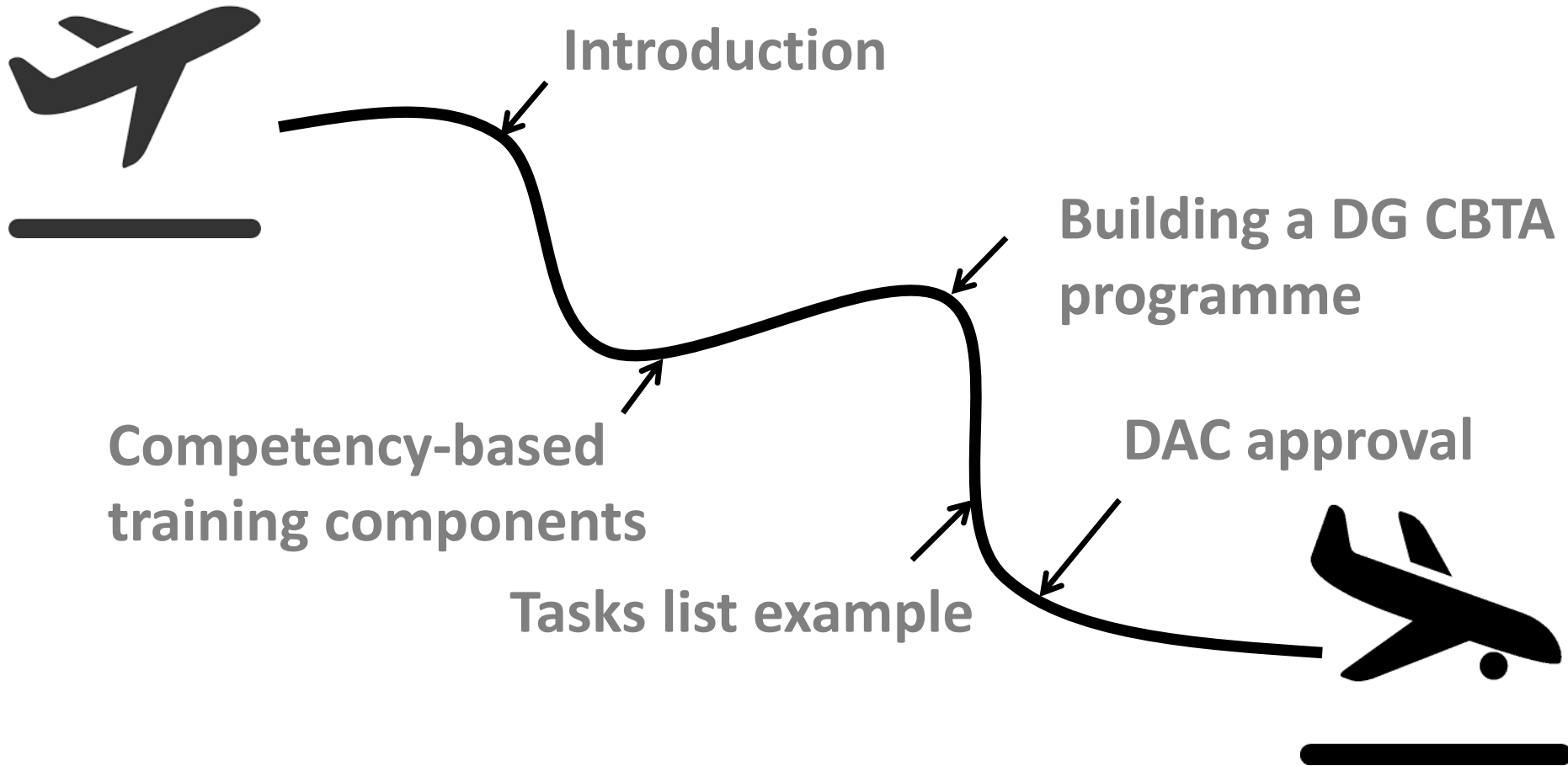# DG CBTA information session

25-Oct-2022

Delbeke Gregory
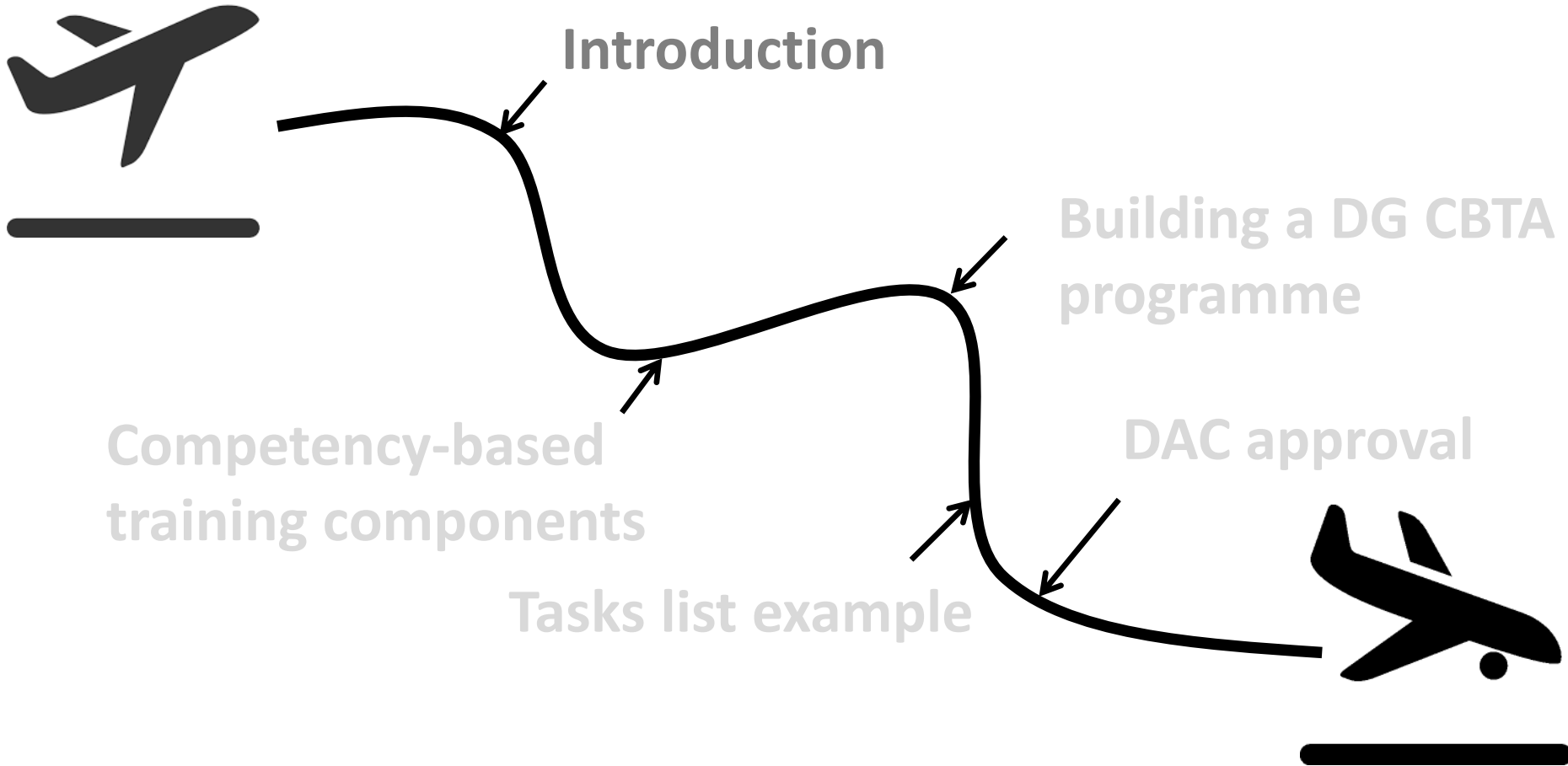
LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de la Mobilité
et des Travaux publics

Direction de l'aviation civile

Agenda

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✈ Agenda

Time	Subject	Speaker
9:30 – 10:00	*Welcome / Participants introduction*	
10:00 – 11:00	DG CBTA – DAC perspective	DAC-OPS (G. Delbeke)
11:00 – 11:15	*Coffee break*	
11:15 – 11:45	DG CBTA – Cargolux approach	Cargolux (J. Lange)
11:45 – 12:00	*Q&A – Open Forum*	

Introduction

➤ Participants introduction:

  ➤ Company

  ➤ Position

  ➤ Role related to DG CBTA

  ➤ Expectations from this meeting

Introduction

✈ The presentation is based on the ICAO Doc 10147 and the IATA DGR appendix H.

ICAO

Doc 10147

Guidance on a Competency-based Approach
to Dangerous Goods Training and Assessment

First Edition, 2021

Approved by and published under the authority of the Secretary General

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Introduction

➤ The benefits of a competency-based approach to training and assessment are:

  ➤ targeting specific training needs

  ➤ supporting continuous learning and performance improvement

  ➤ gearing towards learning rather than simply passing a test

  ➤ ensuring the integration of the knowledge, skills and attitudes (KSA) needed to perform effectively

  ➤ establishing sufficient, well-trained and competent instructors

Introduction

➤ Competency:

➤ A dimension of <u>human performance</u> that is used to reliably predict successful performance on the job. A competency is manifested and observed through <u>behaviours</u> that mobilize the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions.

Introduction

➤ Competency-based training and assessment:

➤ Training and assessment that are characterized by a performance orientation, emphasis on underlined standards of performance and their measurement, and the development of training to the specified performance standards.

Introduction

- ✈ How do we implement CBTA?

  - ✈ identifying key competencies that need to be achieved
  - ✈ determining the most effective way of achieving them
  - ✈ establishing valid and reliable assessment tools to evaluate their achievement

  - ✈ => providing focused and adapted training

Introduction

➤ Knowledge, skills and attitudes:

   ➤ Knowledge:

   ➤ The nine classes of dangerous goods

   ➤ Information required on the dangerous goods transport document

   ➤ Components of an acceptance check

Introduction

➤ Knowledge, skills and attitudes:

   ➤ Skills:

   ➤ How to determine if the substance/material is dangerous goods
   ➤ How to complete the dangerous goods documentation
   ➤ How to check a package (e.g. can it be accepted for transport?)

Introduction

- Knowledge, skills and attitudes:

  - Attitude:

  - Being motivated to ensure safety and to comply with applicable regulations
  - Wanting to adhere to regulations in asking relevant and effective questions
  - Appreciating feedback from team members (e.g. adapts when faced with a situation where no guidance or procedure exists)
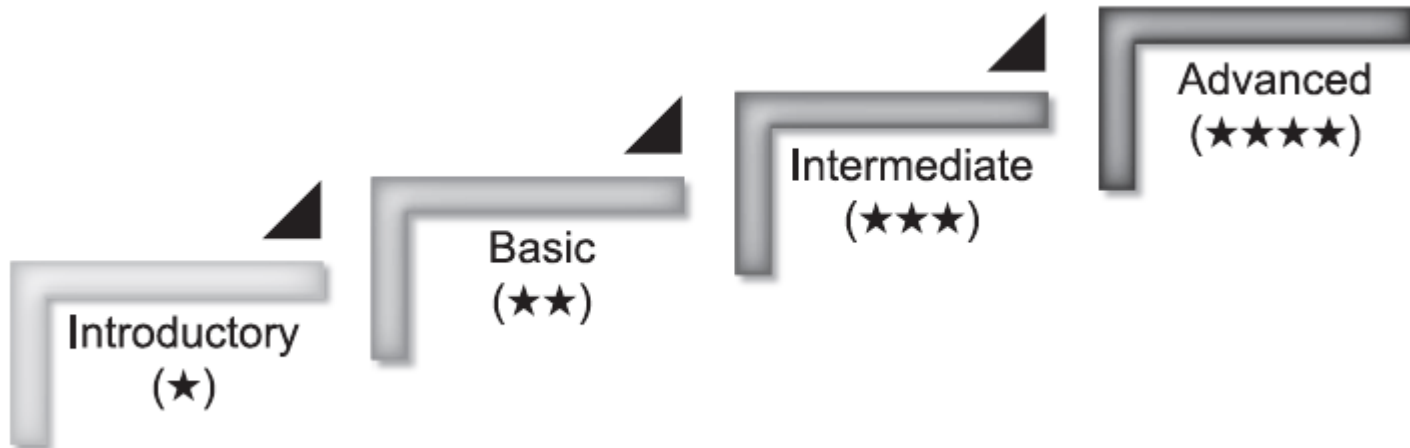
Introduction

➤ Principles of competency-based training and assessment:

   ➤ relevant <u>competencies are clearly defined</u> for a particular role;

   ➤ there is an explicit <u>link between competencies and training</u>, required performance on the job, and assessment;

   ➤ trainees successfully <u>demonstrate competency</u> by meeting the associated competency standard;

   ➤ <u>clear performance criteria</u> are established for assessing competence;

   ➤ to be considered competent, an individual demonstrates an <u>integrated performance of all the required competencies</u> to a specified standard.

Introduction

➤ Levels of proficiency related to competencies:

   ➤ IATA considers 4 levels of proficiency

Introductory
(★)

Basic
(★★)

Intermediate
(★★★)

Advanced
(★★★★)

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Competency-based training components
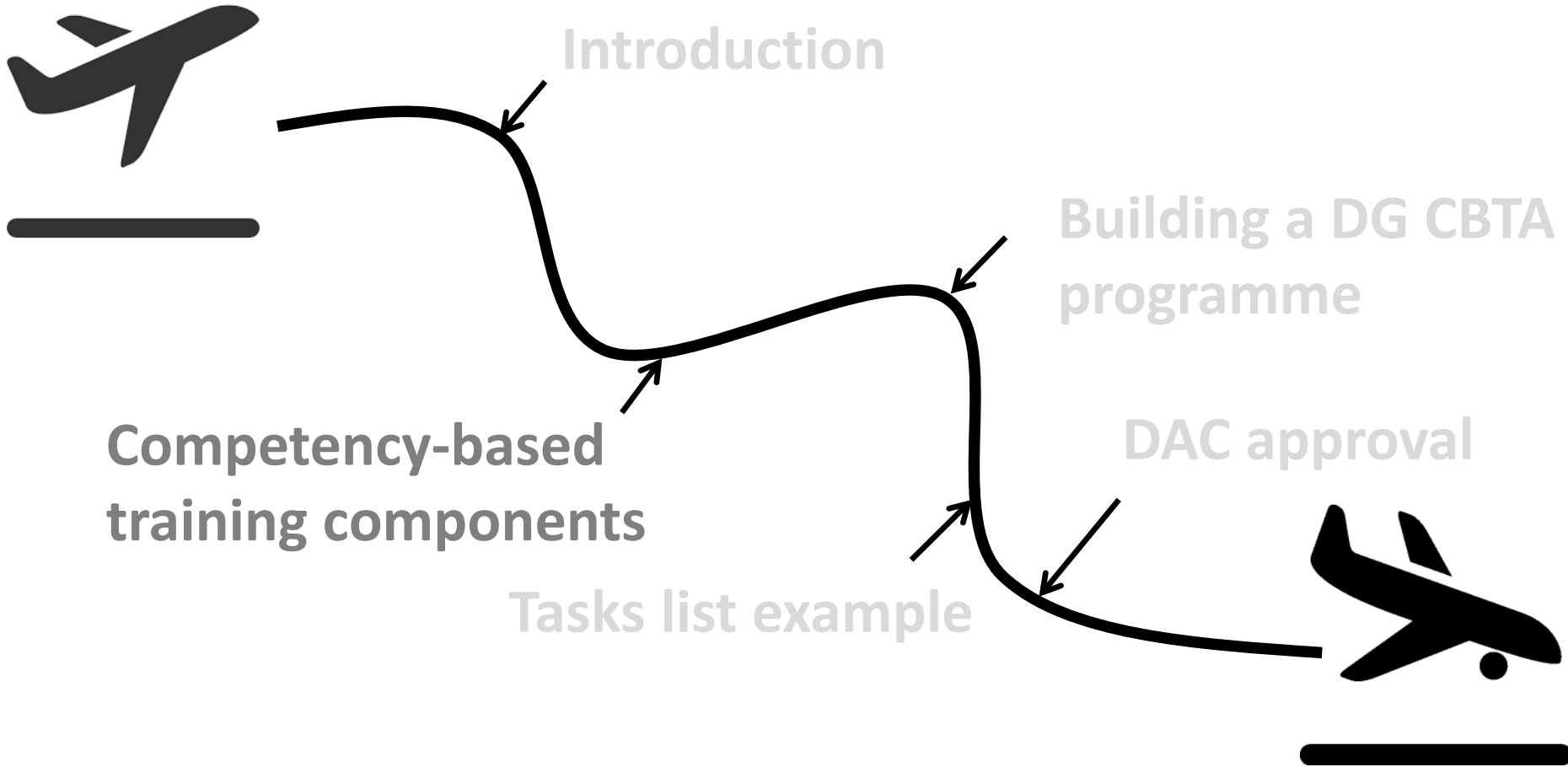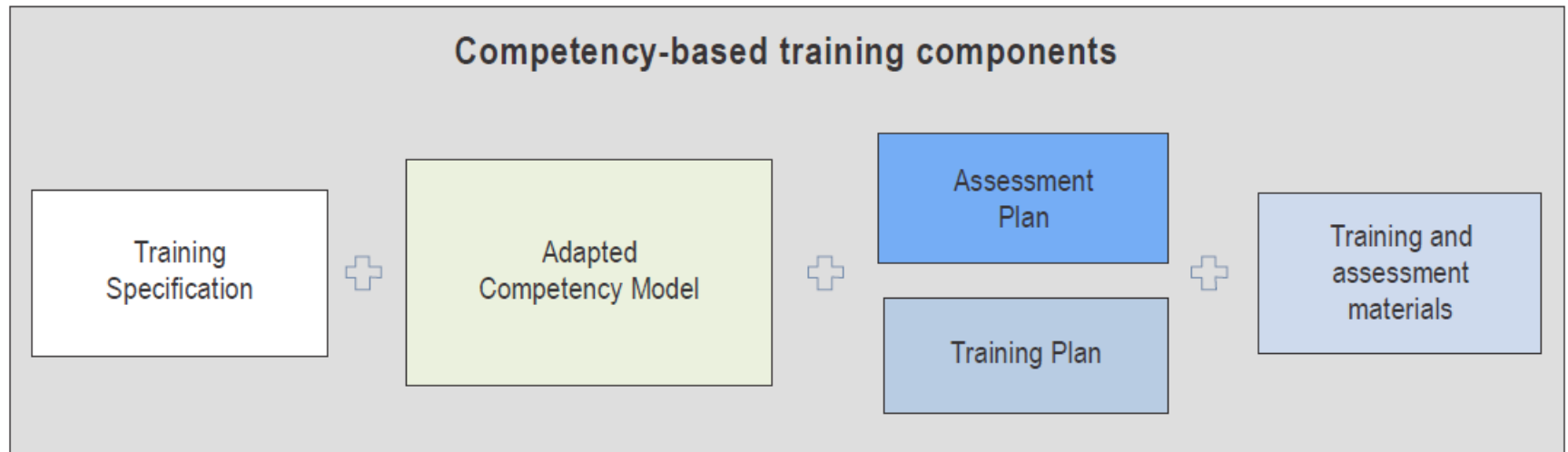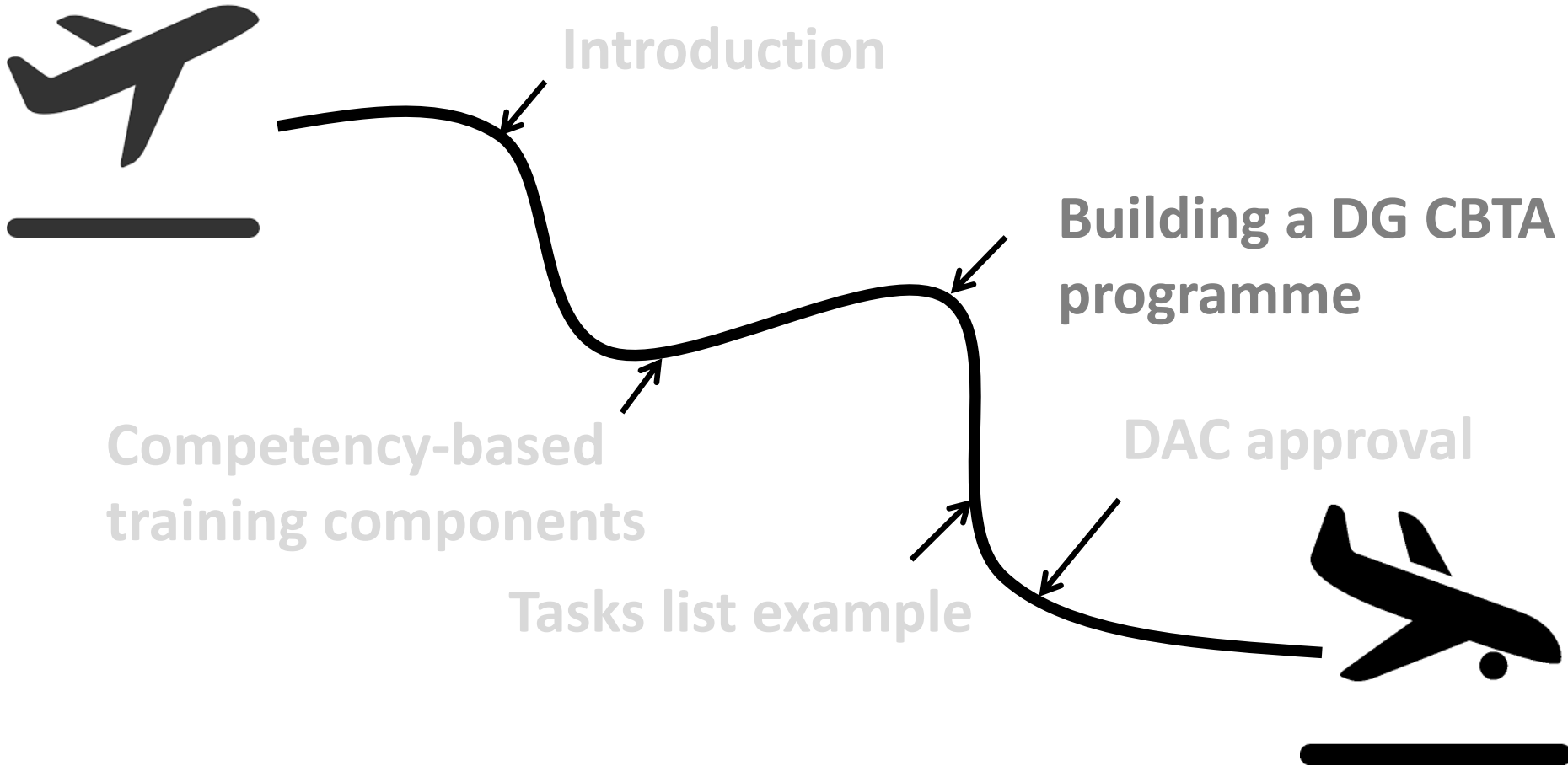
✈ The methodology developed in the ICAO Doc 10147 is based on the the ADDIE (analyse, design, develop, implement and evaluate) instructional design model.

Competency-based training components

Competency-based training components

Training Specification ✚ Adapted Competency Model ✚ Assessment Plan / Training Plan ✚ Training and assessment materials

Competency-based training components

➤ The following training components are essential to develop a CBTA:

- ➤ a training specification that describes the purpose of training, the task list and the requirements that must be fulfilled when designing the training;

- ➤ a competency model adapted from the ICAO competency framework for a given role;

- ➤ an assessment plan providing the process and tools for gathering valid and reliable evidence at different stages during training;

- ➤ a training plan describing the training required to achieve the competencies. It includes but is not limited to a syllabus (including KSA, milestones, lesson plans and schedules); and

- ➤ training and assessment materials and human, material and organizational resources needed to implement training and assessment plans.

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Building a DG CBTA programme

- The building of a CBTA programme is done in 5 steps (workflow):

    - Analyse training need

    - Design local competency-based training and assessment

    - Develop the training and assessment materials

    - Conduct the course in accordance with the training and assessment plans

    - Evaluate the course including the training and assessment plans

Building a DG CBTA programme

✈ The building of a CBTA programme is done in 5 steps (workflow):

Workflow 1	Workflow 2	Workflow 3	Workflow 4	Workflow 5
ANALYSE training need	DESIGN local competency-based training	DEVELOP the training and assessment materials	IMPLEMENT. Conduct the course	EVALUATE the course

Building a DG CBTA programme

✈ Workflow 1 — Analyse training need:

Building a DG CBTA programme
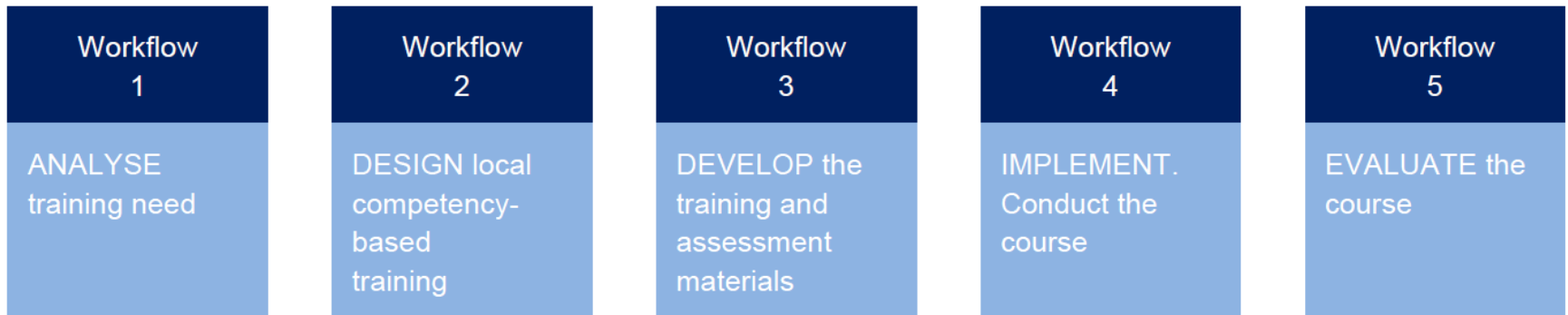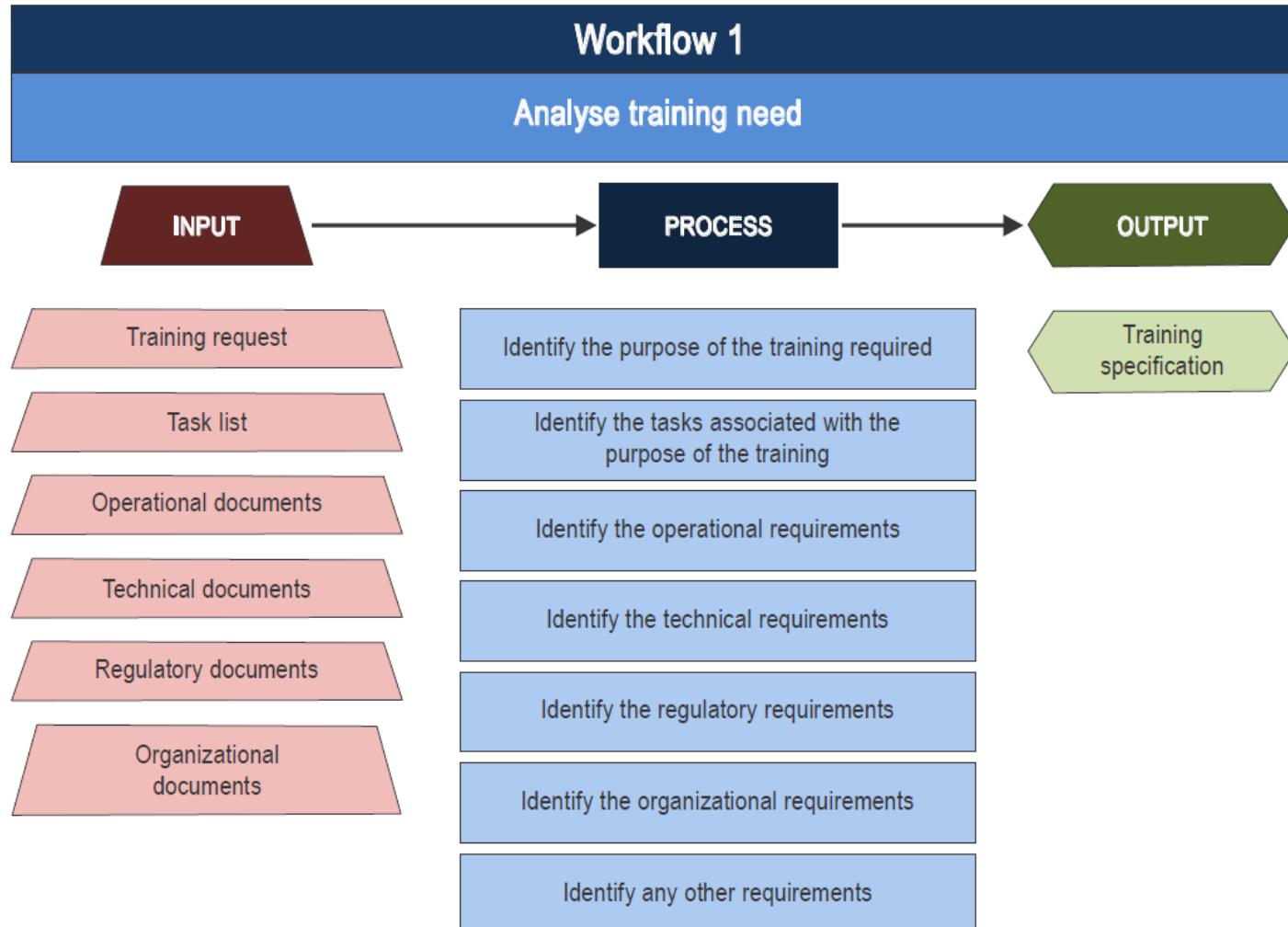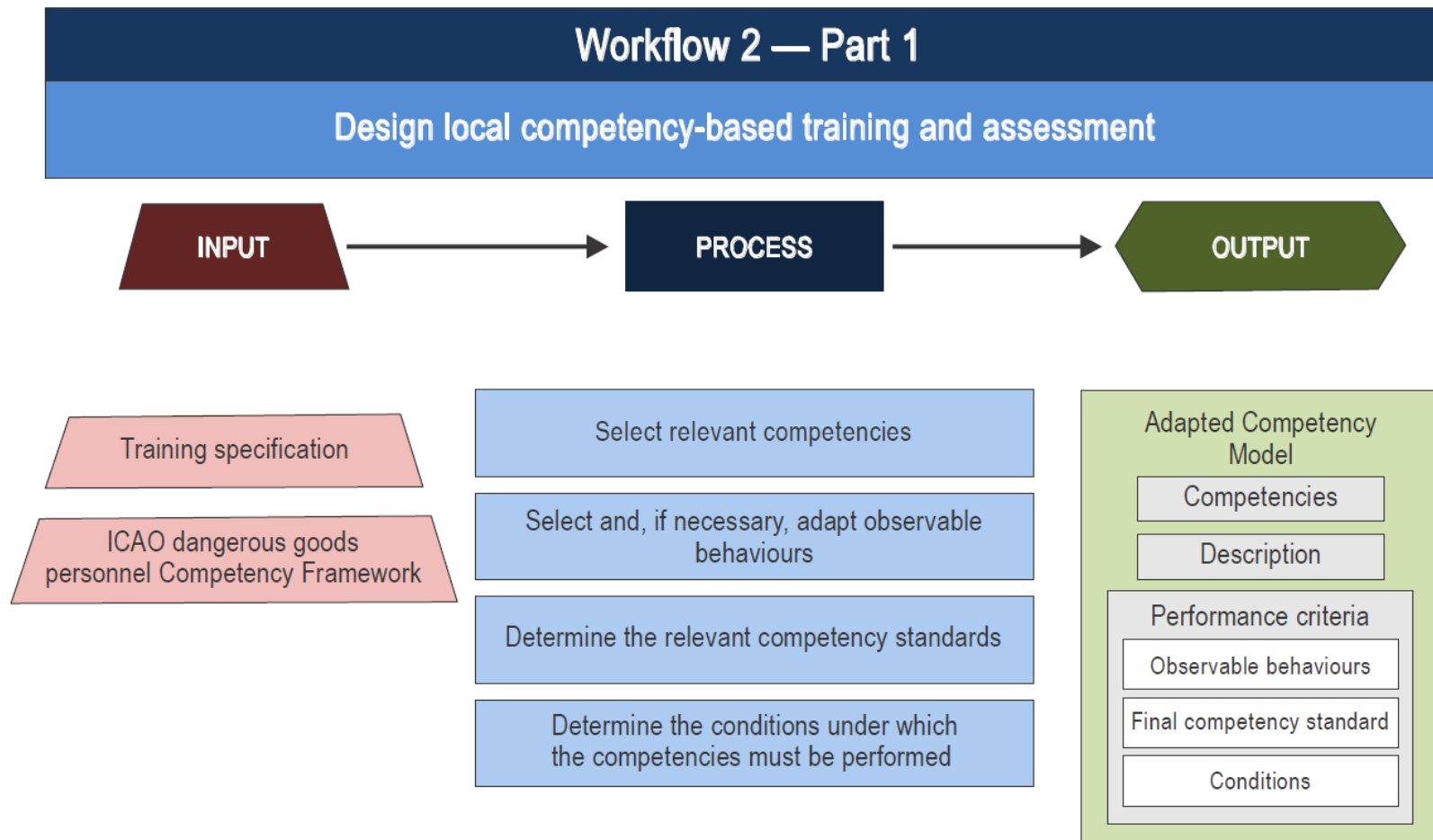
✈ Workflow 1 — Analyse training need:

✈ 8 high level tasks were identified:

1. Understanding the basics of dangerous goods
2. Classifying dangerous goods
3. Preparing a dangerous goods shipment
4. Processing/accepting cargo
5. Managing cargo pre-loading
6. Accepting passenger and crew baggage
7. Transporting cargo/baggage
8. Collecting safety data

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✈ Workflow 2 — Design local competency-based training and assessment:

Workflow 2 — Part 1

Design local competency-based training and assessment

INPUT → PROCESS → OUTPUT

Input	Process	Output
Training specification	Select relevant competencies	**Adapted Competency Model**
ICAO dangerous goods personnel Competency Framework	Select and, if necessary, adapt observable behaviours	Competencies
	Determine the relevant competency standards	Description
	Determine the conditions under which the competencies must be performed	Performance criteria
		Observable behaviours
		Final competency standard
		Conditions

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✈ Workflow 2 — Design local competency-based training and assessment:

Table 2-1.   Template for an adapted competency model

| Adapted competency	Description	Performance criteria		
		Observable behaviour	Competency assessment	
Adapted competency 1	Description 1	OB 1	Final competency standard	Conditions
		OB 2		
		OB n		
Adapted competency 2	Description 2	OB 1	Final competency standard	Conditions
		OB 2		
		OB n		
Adapted competency 3	Description 3	OB 1	Final competency standard	Conditions
		OB 2		
		OB n		

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✈ Example of adapted competency model:

Examples of Competency Factors Mapping Against Tasks

Job Function	Task	Sub-Task	Knowledge	Skills	Attitude	Level of Proficiency
Personnel who prepare dangerous goods consignment	Prepare dangerous goods consignment	Apply marks	The marks applicable to the dangerous goods package	How to apply the marks on the package (e.g. location of the marks)	Being motivated to ensure safety and to comply with applicable regulations Wanting to adhere to regulations in asking relevant and effective questions Appreciating feedback from team members	★★★
		Complete the Shipper's Declaration	Information required on the Shipper's Declaration	How to complete the Shipper's Declaration accurately		★★★
Personnel who process or accept dangerous goods consignment	Process/accept cargo	Complete acceptance checklist	Items on the acceptance checklist that need to be checked	How to complete the acceptance checklist		★★★
	Collect safety data	Report undeclared dangerous goods (to the company's responsible department, e.g. safety department)	The definition of undeclared dangerous goods and that undeclared dangerous goods occurrences need to be reported (and to who)	How to report (e.g. any form to complete, the details required)		★★

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✈ Workflow 2 — Design local competency-based training and assessment:

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Building a DG CBTA programme
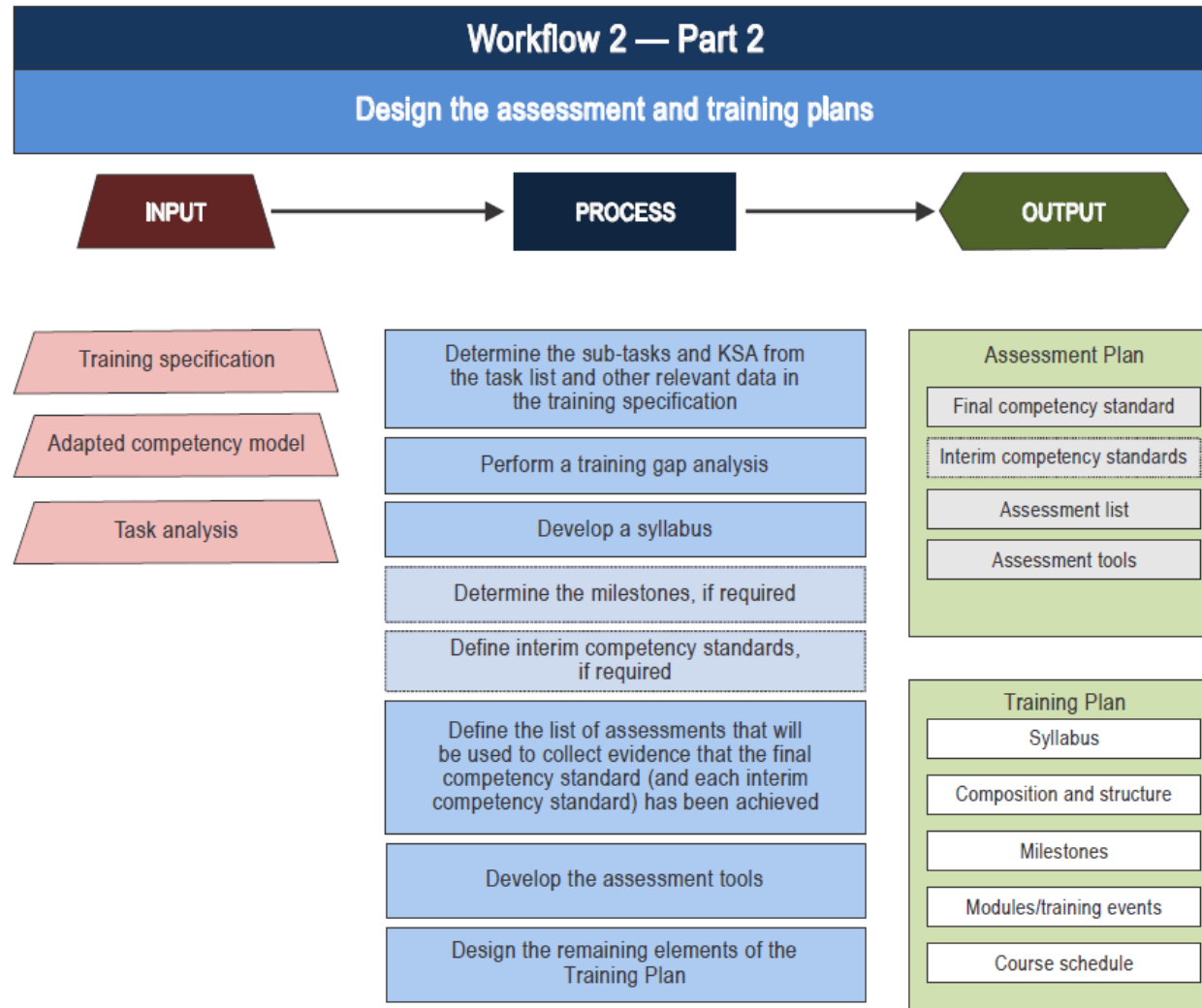
- The purpose of the <u>training plan</u> is to detail:

    - the composition and structure of the course;
    - the syllabus;
    - milestones (if required);
    - modules, training events and their delivery sequence;
    - delivery format (type of training, media, etc); and
    - the course schedule.

✈ Example of delivery methods and level of proficiency associated with the task:

Examples of Blended Delivery Methods of Training for Different Tasks and Levels of Proficiency

Task	Level of Proficiency	Delivery Method of Training
Understanding the basics of dangerous goods	Introductory	E-learning
Processing/ accepting cargo	Intermediate	Physical classroom instructor led and virtual simulation
Collecting safety data	Basic	Group discussion (scenario based)

Building a DG CBTA programme

✈ The <u>assessment plan</u> details:

- ✈ the <u>final competency standard</u> associated with the final milestone;

- ✈ the <u>interim competency standard</u> associated with each milestone (if required);

- ✈ the <u>list of assessments</u> (formative and summative assessments, examinations, oral assessments, etc.) required for each of the milestone(s) that has been defined;

- ✈ <u>when</u> assessments should take place;

- ✈ the <u>tools</u> to be used to collect evidence during practical assessment;

- ✈ the <u>pass marks</u> for projects, examinations or oral assessments;

- ✈ if required, the minimum number of formative assessments to be undertaken prior to starting summative assessments; and

- ✈ the number of observations required to assess performance for the interim and final competency standards.

Building a DG CBTA programme
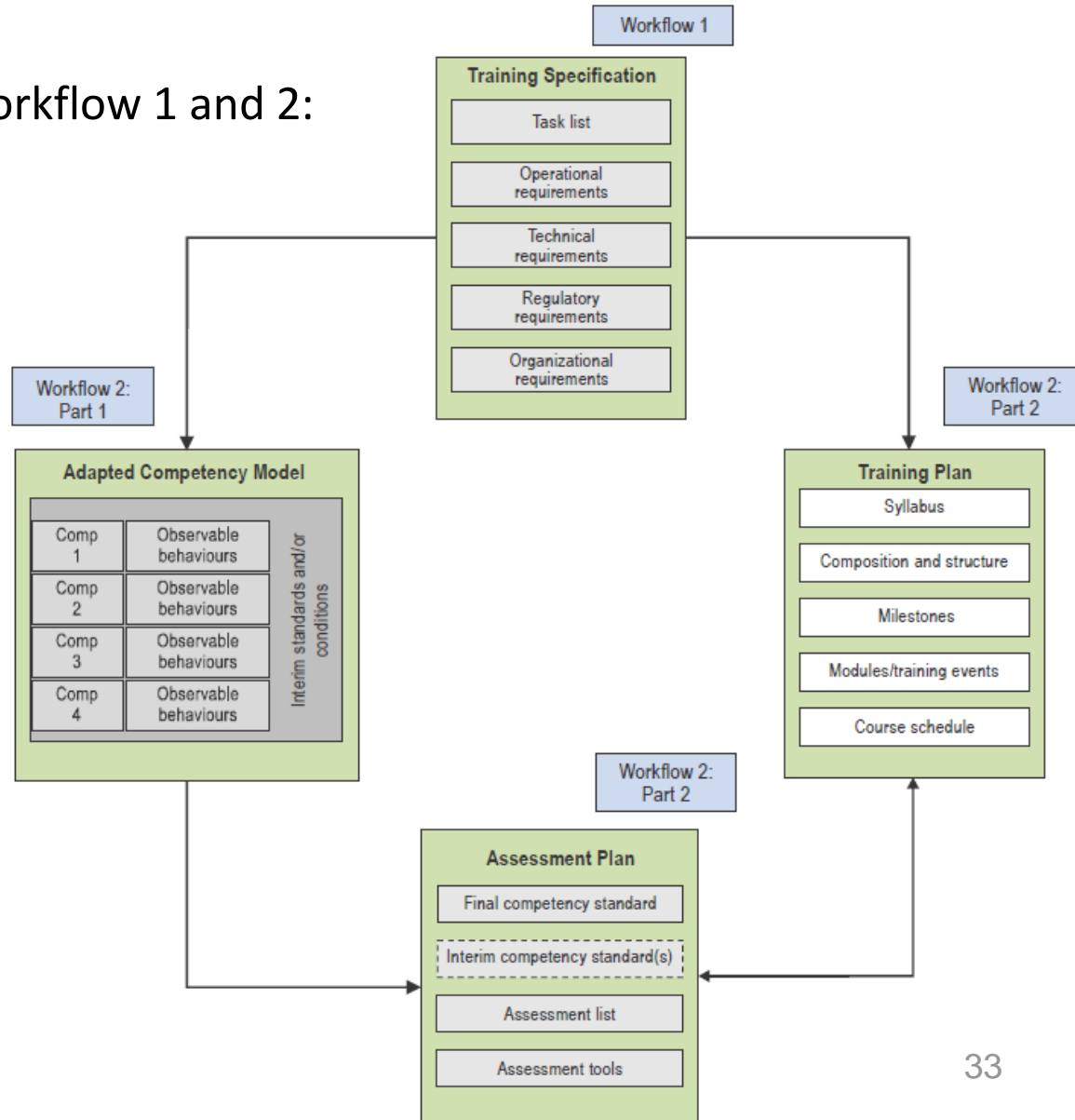
✈ Assessment plan example:

Examples of Assessment Plan for "Personnel Responsible for Processing or Accepting Dangerous Goods Consignments"

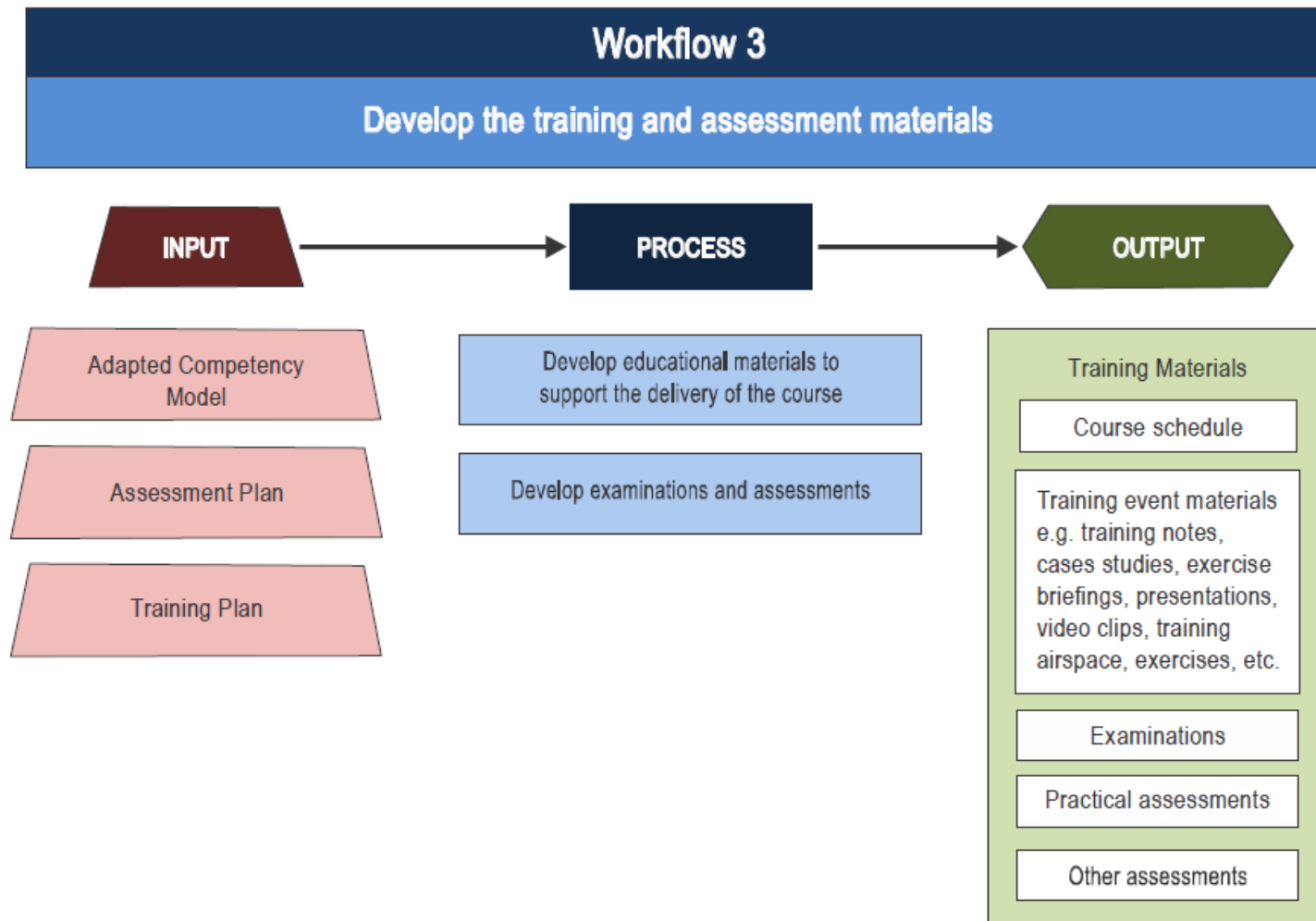| Task	Performance Criteria	Assessment Method
0 - Understanding the basics of dangerous goods	Identify different hidden dangerous goods and take the correct actions in emergency circumstance	Quizzes and task observation
3 - Processing/ accepting cargo	Accept/Reject accurately "x" (where x is a number) shipments containing dangerous goods	a. Simulation including documentation (AWB, DGD, Approval) and packaging verification by utilising an acceptance checklist
		b. Job shadowing for 2 weeks with peer reports.
7 - Collecting safety data	Accurately describe process for reporting where undeclared dangerous goods are identified in cargo offered for transport	Practical exercises and presentation.

Building a DG CBTA programme

✈ Relationship between workflow 1 and 2:

Building a DG CBTA programme

✈ Workflow 3 — Develop the training and assessment materials:

Building a DG CBTA programme

✈ Workflow 4 — Conduct the course in accordance with the training and assessment plans:

Workflow 4

Conduct the course in accordance with the training and assessment plans

INPUT	PROCESS	OUTPUT

INPUT	PROCESS	OUTPUT
Adapted Competency Model	Deliver the training according to the Training Plan	Competent trainees
Assessment Plan	Monitor trainees progress against the interim and final competency standard	
Training Plan	Provide timely and continuous feedback on performance	
Course materials	Diagnose deficiencies and provide remediation in a timely manner	
Facilities and equipment	Carry out assessments according to the Assessment Plan	
Training and assessment personnel		

✈ Workflow 5 — Evaluate the course including the training and assessment plans:

Building a DG CBTA programme
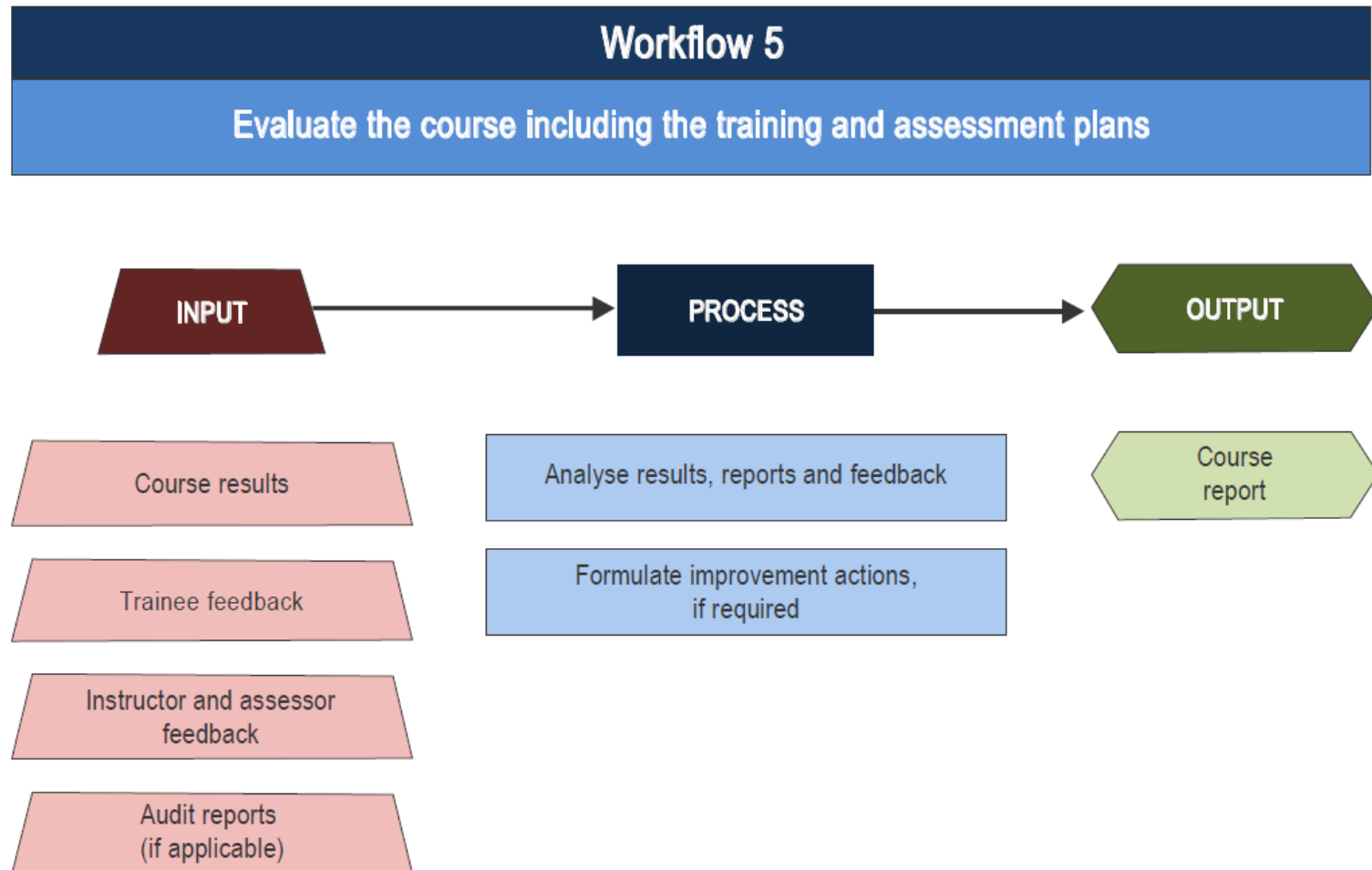
✈ Example of survey questions:

Sample Survey Questions

Target Audience	Survey Questions
Trainee	• Was the training relevant to the function you are assigned to? • Was the level of difficulty of the training adequate? • Were the training materials interesting and engaging? • Which training event was the most relevant to the tasks you have to complete?
Training and assessment personnel	• Were the training objectives clear? • How often did you observe difficulties from trainees in following the learning pace? • Did the trainees struggle in completing the hands-on tasks?

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Tasks list example
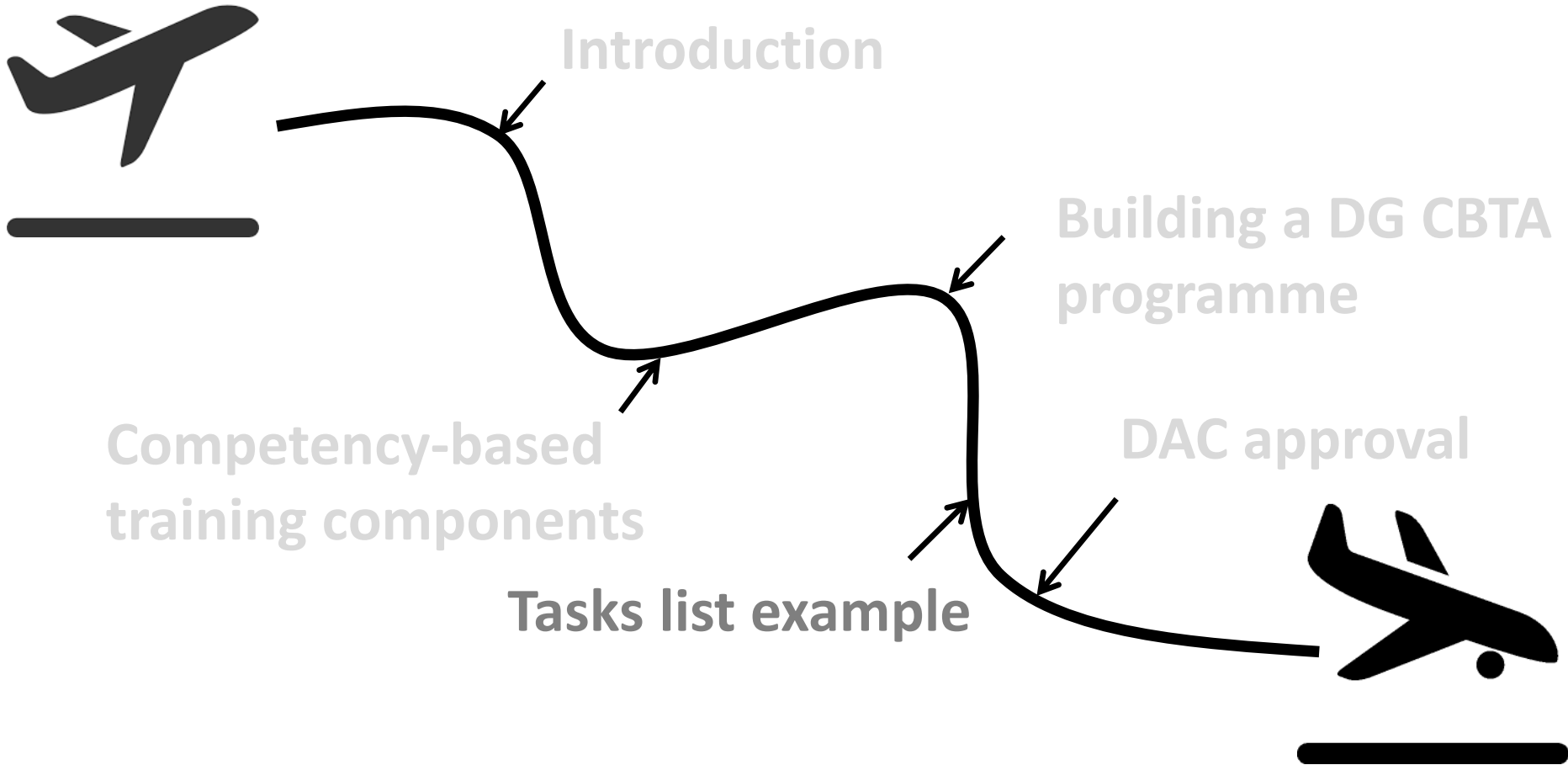
✈ IATA developed a matrix in order to link the 8 high level tasks with subtasks:

TABLE H.5.7.B
Dangerous Goods Task List Template

			Knowledge Base	Classifying dangerous goods	Preparing dangerous goods shipment	Pro-cessing/ accepting cargo	Managing cargo pre-loading	Accepting passenger and crew baggage	Trans-porting cargo/ baggage	Collecting safety data
0		Understanding the basics of dangerous goods								
	0.1	Recognizing dangerous goods applicability								
		0.1.1	Understand the definition							
		0.1.2	Recognize the legal framework (global, national)							
		0.1.3	Identify the application and scope							
		0.1.4	Differentiate hazard and risk							
	0.2	Understanding the general limitations								
		0.2.1	Develop a sense of forbidden dangerous goods							
		0.2.2	Recognize potential hidden dangerous goods							
		0.2.3	Familiarise with passenger pro-visions							
	0.3	Identifying roles and responsibilities								
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders							
		0.3.2	Understand the passenger's re-sponsibilities							
		0.3.3	Recognise the impact of State & operator variations							
	0.4	Understanding the importance of classification & packaging								
		0.4.1	Identify the general information about classes, divisions							
		0.4.2	Understand general principles of Packing Groups							
		0.4.3	Consider multiple hazards							

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Tasks list example

- Every function should be linked to high level task(s)

- For each high level task, the level of proficiency required for that function should be defined

- This table should be customized to the organisation (the tasks repartition between functions might be different from one organisation to the other and the privileges of the organisation may vary)

Tasks list example

✈ Example for Flight Crew

Tasks list example

Function: Flight Crew				Managing cargo pre-loading
0		Understanding the basics of dangerous goods		★
	0.1		Dangerous goods applicability	★
		0.1.1	Understand the definition	★
		0.1.2	Recognise the legal framework (global, national)	★
		0.1.3	Identify the application scope	★
		0.1.4	Differentiate hazard and risk	★
	0.2		Understanding the general limitations	★
		0.2.1	Develop a sense of forbidden dangerous goods	★
		0.2.2	Recognise potential hidden dangerous goods	★
		0.2.3	Familiarise with passenger provisions	★
	0.3		Identifying roles and responsibilities	★
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders	★
		0.3.2	Understand the passenger's responsibilities	★
		0.3.3	Recognise the impact of State & operator variations	★
	0.4		Understanding the importance of classification & packaging	★
		0.4.1	Identify the general information about classes, divisions	★
		0.4.2	Understand general principles of packing groups	★
		0.4.3	Consider multiple hazards	★
	0.5		Understanding hazard communication	★
		0.5.1	Recognise the basic marking requirements	★
		0.5.2	Recognise the basic labelling requirements	★
		0.5.3	Identify the required documentation	★
	0.6		Familiarising with basic emergency response	★
		0.6.1	Create awareness about general emergency procedures	★
		0.6.2	Understand the employer's emergency response requirements	★

Tasks list example

6			Transporting cargo/baggage	
	6.2		Manage dangerous goods pre and during flight	★★★
		6.2.1	Address dangerous goods not permitted in baggage	★★★
		6.2.2	Interpret NOTOC	★★★
		6.2.3	Apply procedures in the event of an emergency	★★★
		6.2.4	Inform flight operations officer/flight dispatcher/air traffic control in the event of an emergency	★★★
		6.2.5	Inform emergency services of the dangerous goods on the NOTOC in the event of an emergency	★★★
7			Collecting safety data	
	7.1		Report dangerous goods accidents	★★
	7.2		Report dangerous goods incidents	★★
	7.3		Report undeclared/mis-declared dangerous goods	★★
	7.4		Report dangerous goods occurrences	★★

Tasks list example

✈ Example for Cabin Crew

Tasks list example

Function: Cabin Crew				Transporting cargo/ baggage
0		Understanding the basics of dangerous goods		★
	0.1		Dangerous goods applicability	★
		0.1.1	Understand the definition	★
		0.1.2	Recognise the legal framework (global, national)	★
		0.1.3	Identify the application and scope	★
		0.1.4	Differentiate hazard and risk	★
	0.2		Understanding the general limitations	★
		0.2.1	Develop a sense of forbidden dangerous goods	★
		0.2.2	Recognise the potential hidden dangerous goods	★
		0.2.3	Familiarise with passenger's provisions	★
	0.3		Identifying roles and responsibilities	★
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders	★
		0.3.2	Understand the passengers responsibilities	★
		0.3.3	Recognise the impact of State & operator variations	★
	0.4		Understanding the importance of classification & packaging	★
		0.4.1	Identify the general information about classes, divisions	★
	0.5		Understanding hazard communication	★
		0.5.1	Recognise the basic marking requirements	★
		0.5.2	Recognise the basic labelling requirements	★
		0.5.3	Identify the required documentation for DG shipments	★
	0.6		Familiarising with basic emergency response	★
		0.6.1	Create awareness about general emergency procedures	★
		0.6.2	Under the employer's emergency response requirements	★

Tasks list example

5			Accepting passenger and crew baggage	
	5.2		Accept baggage	★★★
		5.2.1	Apply operator requirements	★★★
		5.2.2	Verify passenger baggage requirements	★★★
6			Transporting cargo/baggage	
	6.2		Manage dangerous goods pre and during flight	★★★
		6.2.1	Address dangerous goods not permitted in baggage	★★★
		6.2.3	Apply procedures in the event of an emergency	★★★
7			Collecting safety data	
	7.1		Report dangerous goods accidents	★
	7.2		Report dangerous goods incidents	★
	7.3		Report undeclared/mis-declared dangerous goods	★
	7.4		Report dangerous goods occurrences	★

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DAC Approval

✈ DG training programme shall be approved:

    ✈ No change in the requirement

    ✈ However, approach is different

    ✈ Checklist was adapted

DAC Approval

✈ Application for approval shall include:

    ✈ Training specification (including the tasks list)

    ✈ Training plan (syllabus, modules, sequences, delivery format, schedule…)

    ✈ Assessment plan (competency standard, assessment tools…)

    ✈ Instructor qualification

DAC Approval

✈ Approval will be issued:

 ✈ With no validity date
 ✈ Changes to the training should be notified
 ✈ Oversight programme will be developed to audit the training

Conclusions

- Thank you for your attention

- Questions?