PBN
AIRSPACE CONCEPT WORKSHOP

Activity overview

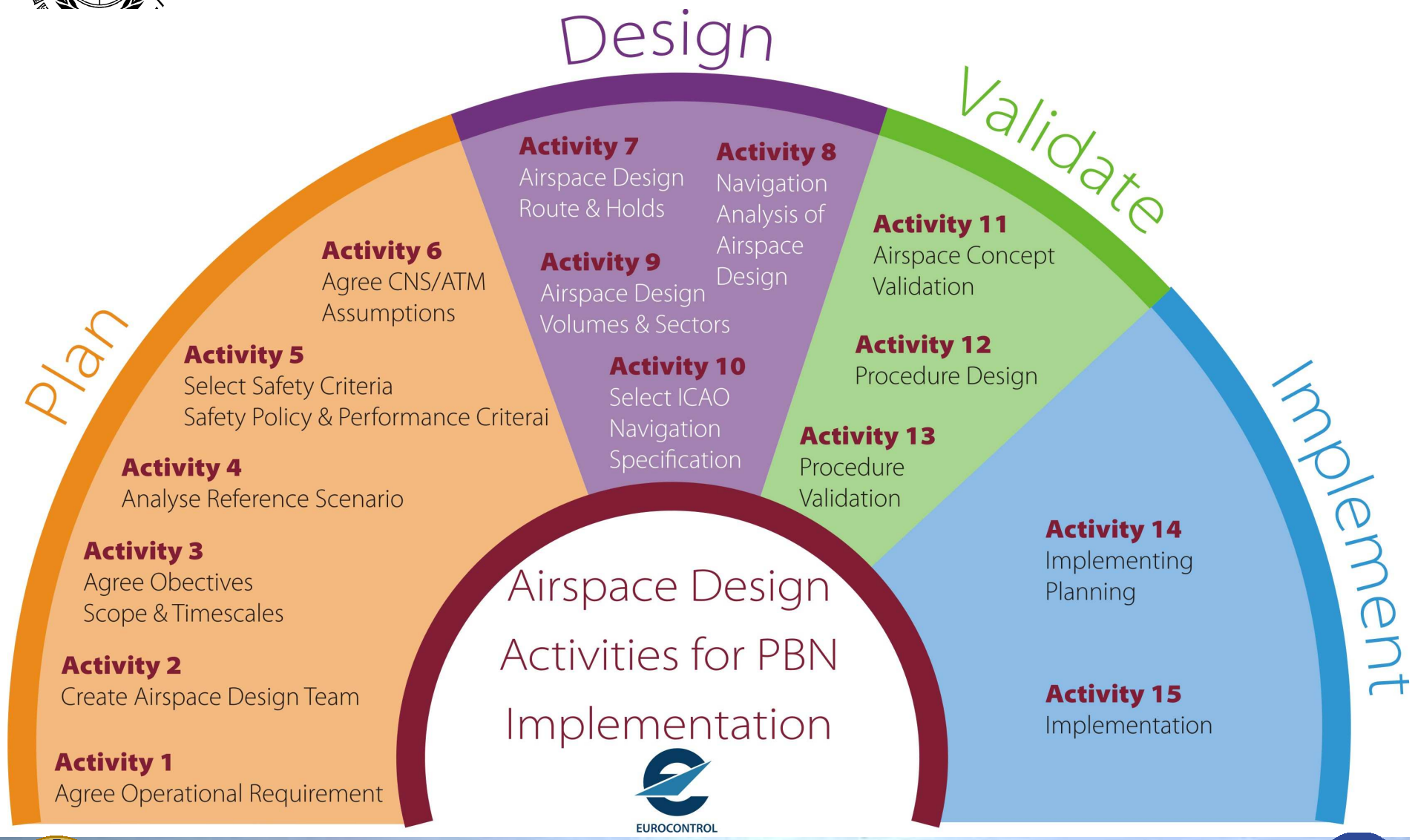
Federal Aviation Administration

EUROCONTROL

OBJECTIVE

This module will provide an overview of the Activities that are involved in the development of a PBN Airspace Concept.

It will provide a direct link to the PBN Manual and it's processes and related steps.


Design
Validate
Plan
Implement
Activity 7
Airspace Design
Route & Holds
Activity 8
Navigation
Analysis of
Airspace
Design
Activity 9
Airspace Design
Volumes & Sectors
Activity 10
Select ICAO
Navigation
Specification
Activity 11
Airspace Concept
Validation
Activity 12
Procedure Design
Activity 13
Procedure
Validation
Activity 6
Agree CNS/ATM
Assumptions
Activity 5
Select Safety Criteria
Safety Policy & Performance Criterai
Activity 4
Analyse Reference Scenario
Activity 3
Agree Obectives
Scope & Timescales
Activity 2
Create Airspace Design Team
Activity 1
Agree Operational Requirement
Airspace Design
Activities for PBN
Implementation
EUROCONTROL
Activity 14
Implementing
Planning
Activity 15
Implementation

Activity 1 (P1)

1 - Agree on Operational Requirements

- Capacity
- Environment
- Accessibility
- Safety
- Efficiency

Activity 1 (P1)

1 - Agree on Operational Requirements

- Sample ATM requirements
- Agreeing on priorities can be difficult…

INSET

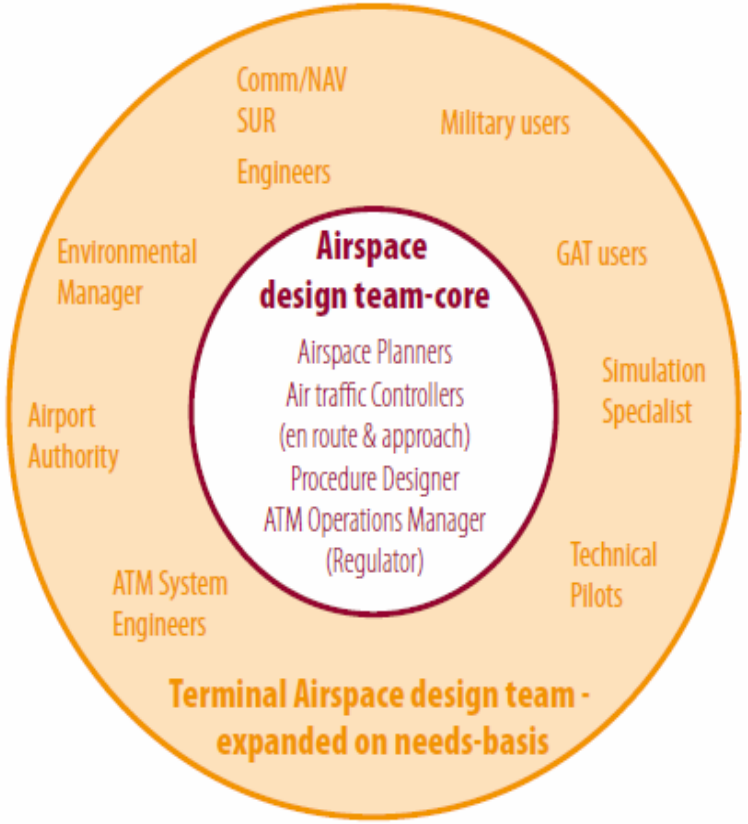
Sample Operational Requirements

- MARKED TRAFFIC INCREASE/DECREASE AT ADJACENT AIRPORT
- TRAFFIC DISTRIBUTION
- NOISE COMPLAINTS
- ADDITION/CLOSURE OF RUNWAY(S)
- NEW AIRPORT TO BE BUILT/AIRPORT TO BE CLOSED
- OPERATIONAL DIFFICULTIES IN ADJACENT SECTORS
- INCREASED/REDUCED CAPACITY IN ADJACENT SECTORS
- RE-ORIENTATION OF EN ROUTE ATS ROUTE FLOWS
- NEW AVAILABILITY/CLOSURE OF AIRSPACE
- HIGH INCIDENCE OF LEVEL BUSTS
- INCREASE OF UNAUTHORISED AIRSPACE PENETRATIONS
- NEW INTRODUCTION/APPLICATION OF TECHNOLOGY COMM/NAV OR SUR

ACTIVITY 2 (P1)

2 – Create Airspace Design Team

- Lead by ATM/airspace specialist
- ATC (Approach and Area controllers)
- ATM & CNS specialist
- Procedure designers
- Technical pilots
- ……

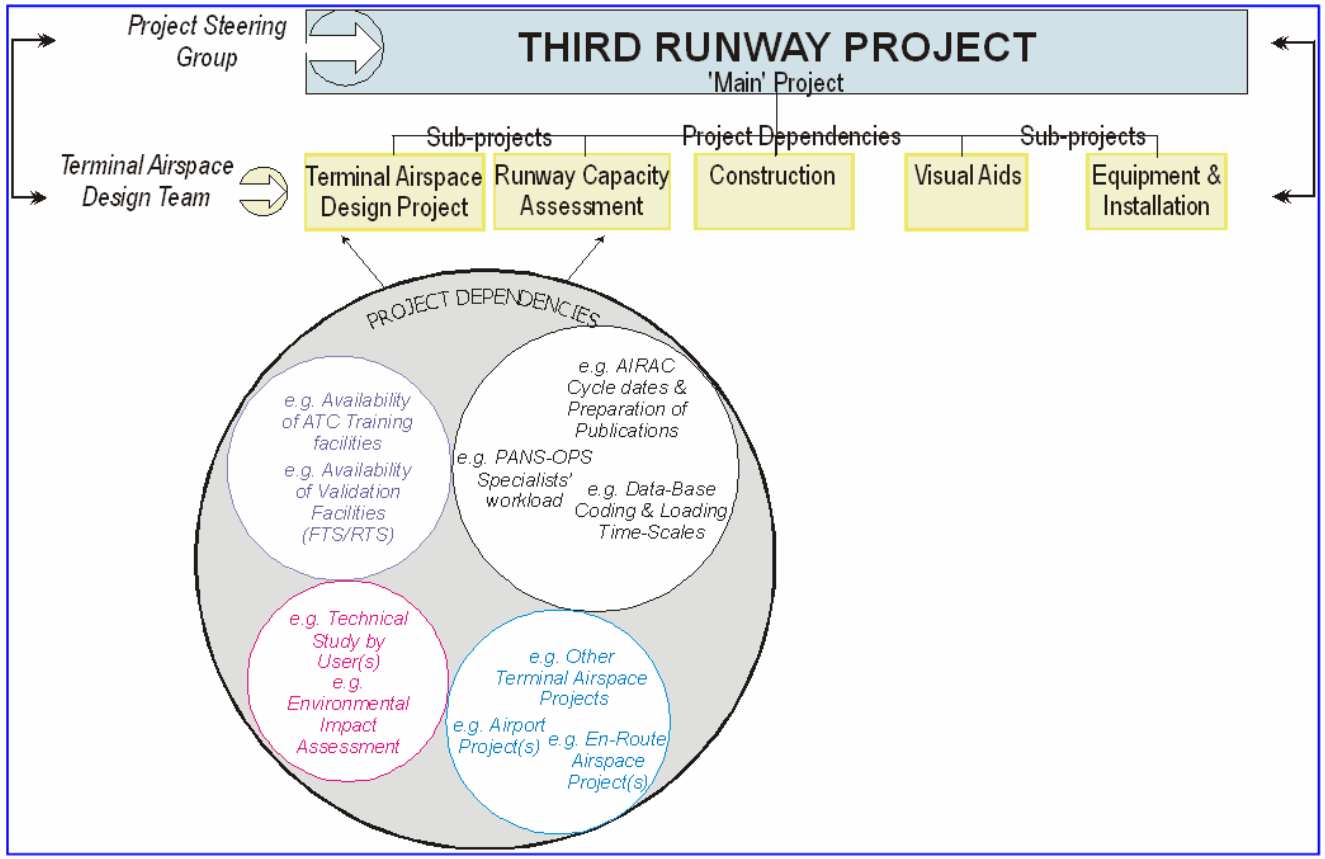


Activity 3 (P1)

3 – Project objectives, scope and timescales

Needed!

An organisational structure



Activity 3 (P1)

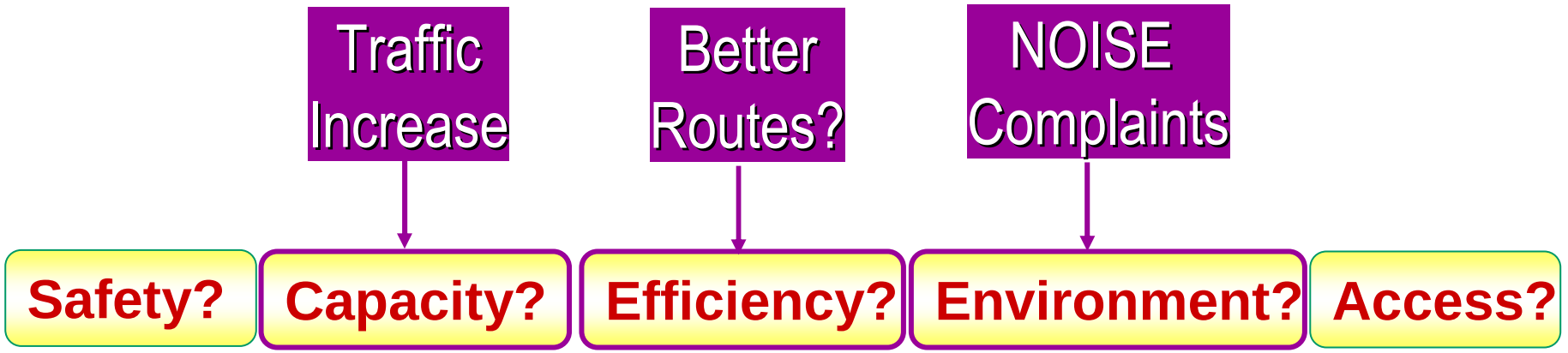
3 – Project objectives, scope and timescales

- Objective derived from Ops requirements
- Scope (sets the limit of the project)
  - Time
  - Resources
- Timescales

Sometimes the most difficult task

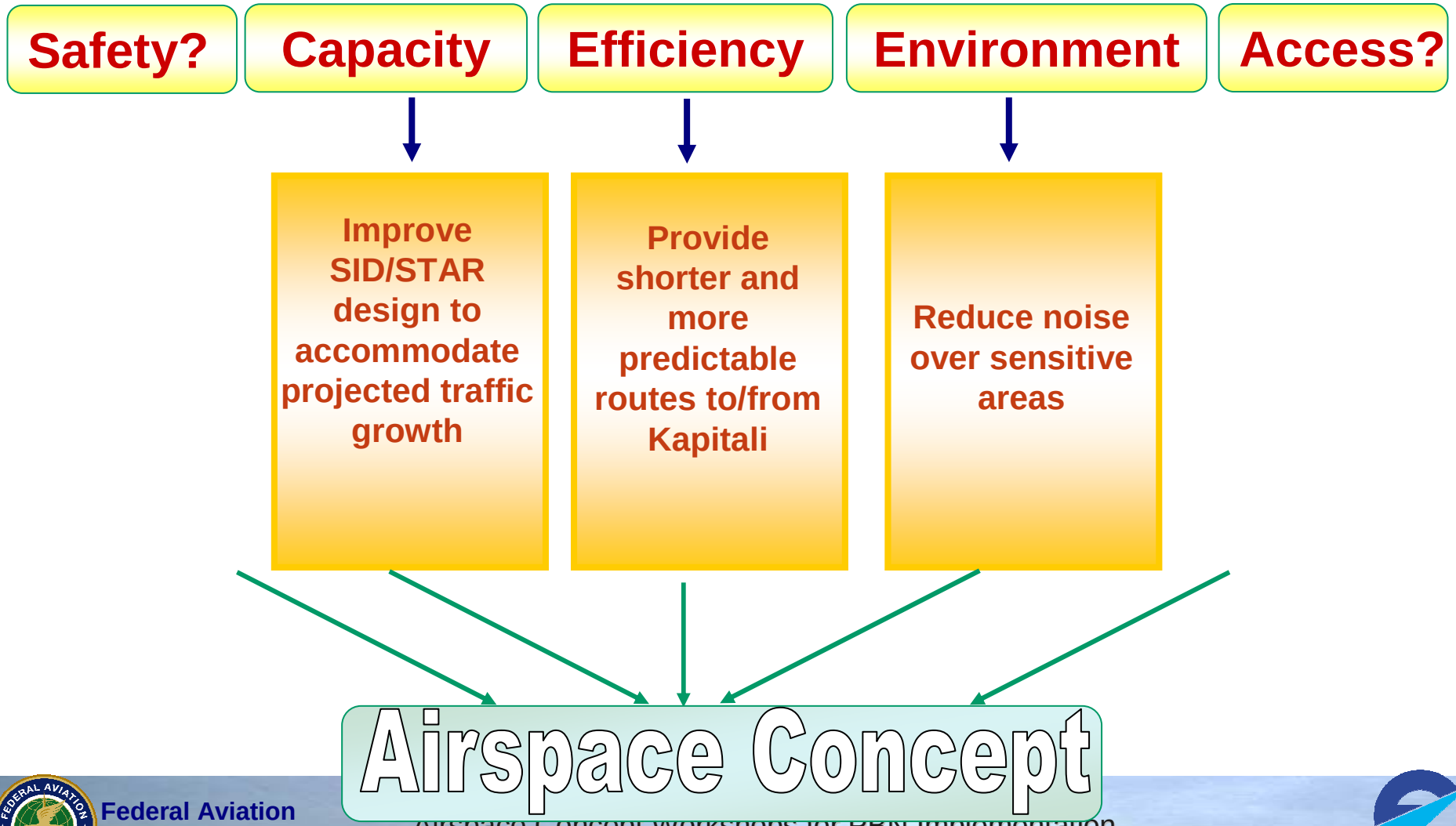
Activity 3 (P1)

3 – Project objectives



Activity 3 (P1)

3 – Project objectives

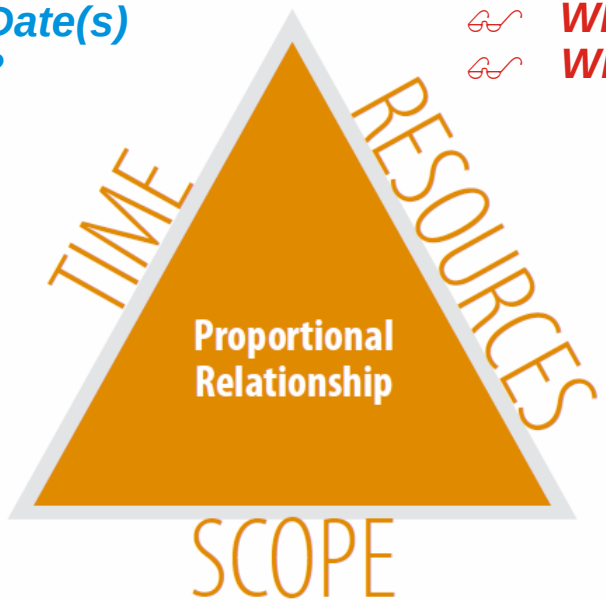


Activity 3 (P1)

3 – Project objectives, scope and timescales

- *Implementation Date(s)*
- *Phases of Work?*

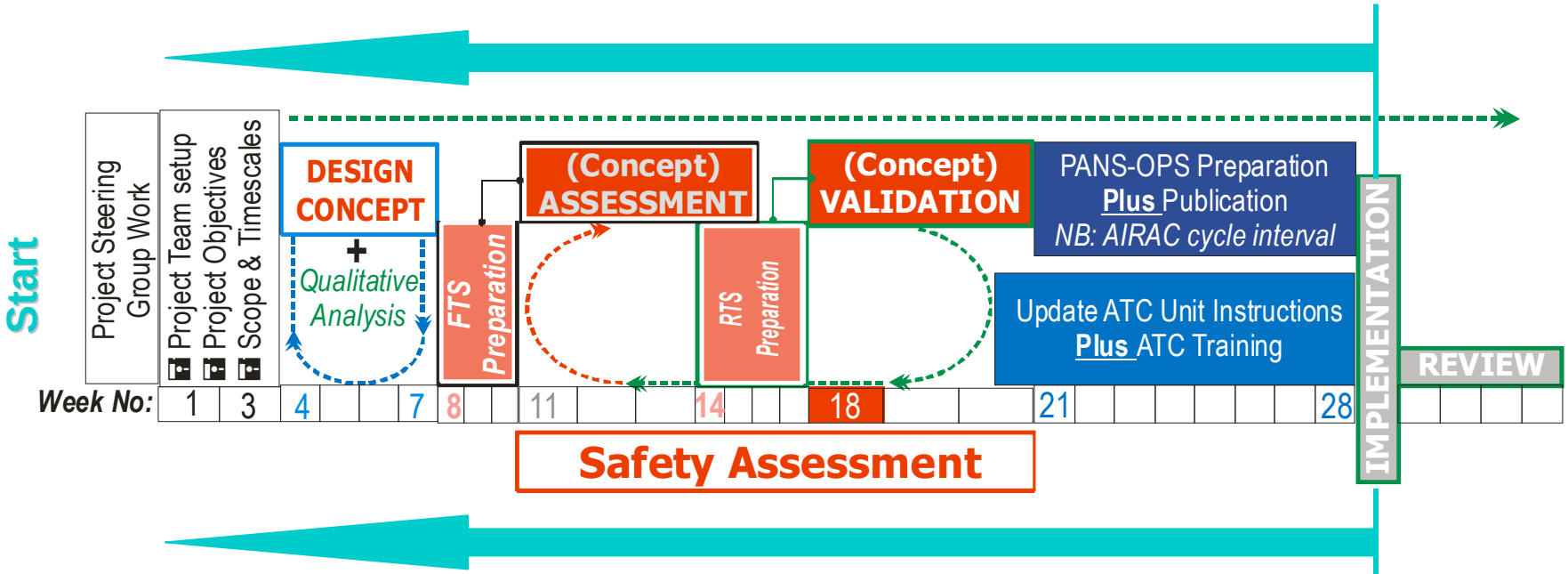
- *Which Human Resources?*
- *What about the budget?*



- *What is the Objective ?*
- *How much can be done?*
- *What cannot be done?*

Activity 3 (P1)

3 – Project timescales



To find out time required to complete a project
– calculate **backward** from Implementation date

PLANNING TOOL EXAMPLE

LINK

AIRSPACE CONCEPT HANDBOOK ACTIVITIES 1 TO 15: PROJECT PLANNING SAMPLE

ACT	*(to be read from bottom-up)*	No of Days	Key Dates (latest)	
15	Implementation of Airspace Change (Match Airac Cycle date)	0	06/02/2014	<< Enter INTENDED Implementation Date here (Must match Airac Cycle Date)
14	Implementation Planning - Write up LoAs - ATC System Changes	56	12/12/2013	
	Additional working day buffer to allow for un foreseen delays	60	13/10/2013	
12+13	Procedure Design and Validation + 56 day AIRAC cycle - ATC Training ‡	90	15/07/2013	
11	Airspace Concept Validation by Real-Time Simulation (Preparation an Runs)	100	06/04/2013	
11	Airspace Concept Validation by Fast-Time Simulation (Preparation and runs)	70	26/01/2013	
10	Selection of ICAO Navigation Specification	2	24/01/2013	
7-9	Finalise Airspace Design - iteration	5	19/01/2013	
9	Airspace Design: Structures and Sectors	5	14/01/2013	
7	2nd Iteration: Airspace Design - Routes and Holds	5	09/01/2013	
8	Navigation Analysis of Airspace Design	5	04/01/2013	
7	1st Iteration: Airspace Design - Routes and Holds	10	25/12/2012	
6	Data collection and agreement on CNS/ATM assumptions incl. Fleet capability; traffic sample etc.	5	20/12/2012	
5	Select Safety Criteria; Determine Performance Criteria and understand Safety Policy Consi-derations	10	10/12/2012	
4	Analyse Reference Scenario (incl. Data collection of full ATM operations and critical review of current opertions)	20	20/11/2012	
1-3	Agree Operational Requirement; Project Planning; Create Airspace Design Team; Agree Project Objectives and Scope	10	10/11/2012	<< This is the latest project start date
	Total number of **working** days required	453		
Notes				
†	Assumes availability of FTS or RTS simulator slots, available of required specialists & ATCs/pseudo pilots			
‡	Separate no of days not calculated for ATC Training; Above shows that this would occur at the same time as PANS-OPS procedure design or during 56 day final AIRAC cycle			

Sample Project Checklist

TERMINAL AIRSPACE DESIGN PROJECT (ref. Part B)			
PROJECT NAME:	START: [date]	TARGET IMPLEMENTATION:	
ESTIMATED EFFORT (TOTAL)	END: [DATE]	[DATE]	
BACKGROUND & CONTEXT:			
INTERNAL DESIGN TEAM MEMBERS:	[NAME]	[NAME]	[NAME]
	[NAME]	[NAME]	[NAME]
EXTERNAL TEAM MEMBERS:	[NAME]	[NAME]	[NAME]
INTERNAL REPORTS TO:	[NAME]	[NAME]	[NAME]

STRATEGIC CONSIDERATIONS
1. OBJECTIVES:

DESIGN CONSIDERATIONS	
1. OBJECTIVES:	2. SCOPE:
3. DEPENDENCIES:	4. RISKS: performance indicators
5. PERFORMANCE INDICATORS: Safety: Capacity: Environmental:	

THANK YOU