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# Workshop on ASBU Implementation: Alignment of Regional and National Air Navigation Performance Based Plans

(Lima, Peru, 14-18 August 2017)

## ROADMAP TECHNOLOGY

ONOFRIO SMARRELLI  
CNS REGIONAL OFFICER



## ➤ Introduction

## ➤ Communication

Air-ground data link communication

Ground-ground communication

Air-ground voice communication

## ➤ Navigation

## ➤ Surveillance

Ground-based surveillance

Surface surveillance

Air- air surveillance

## ➤ Information Management

## ➤ Avionic

Communications

Surveillance

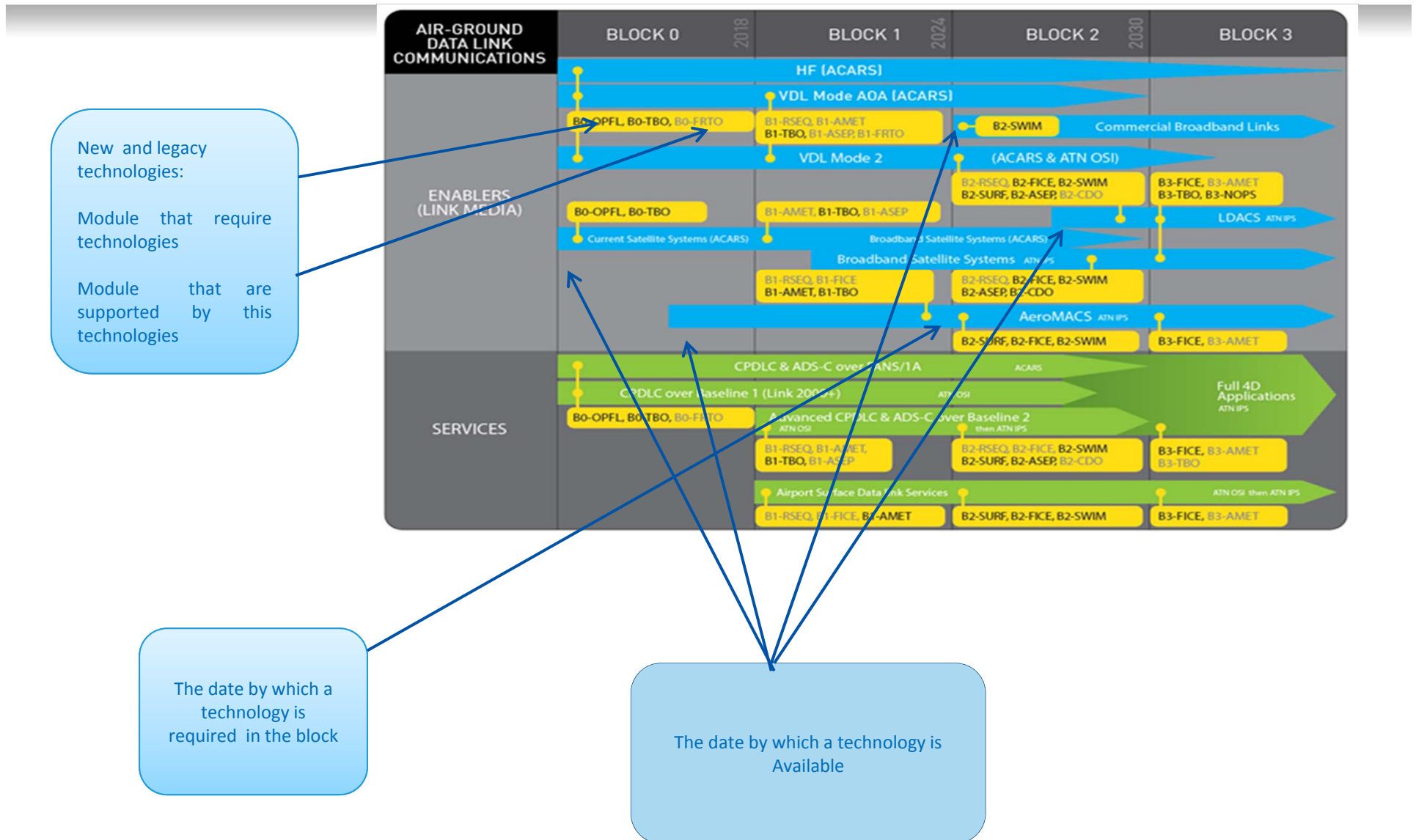
Navigation

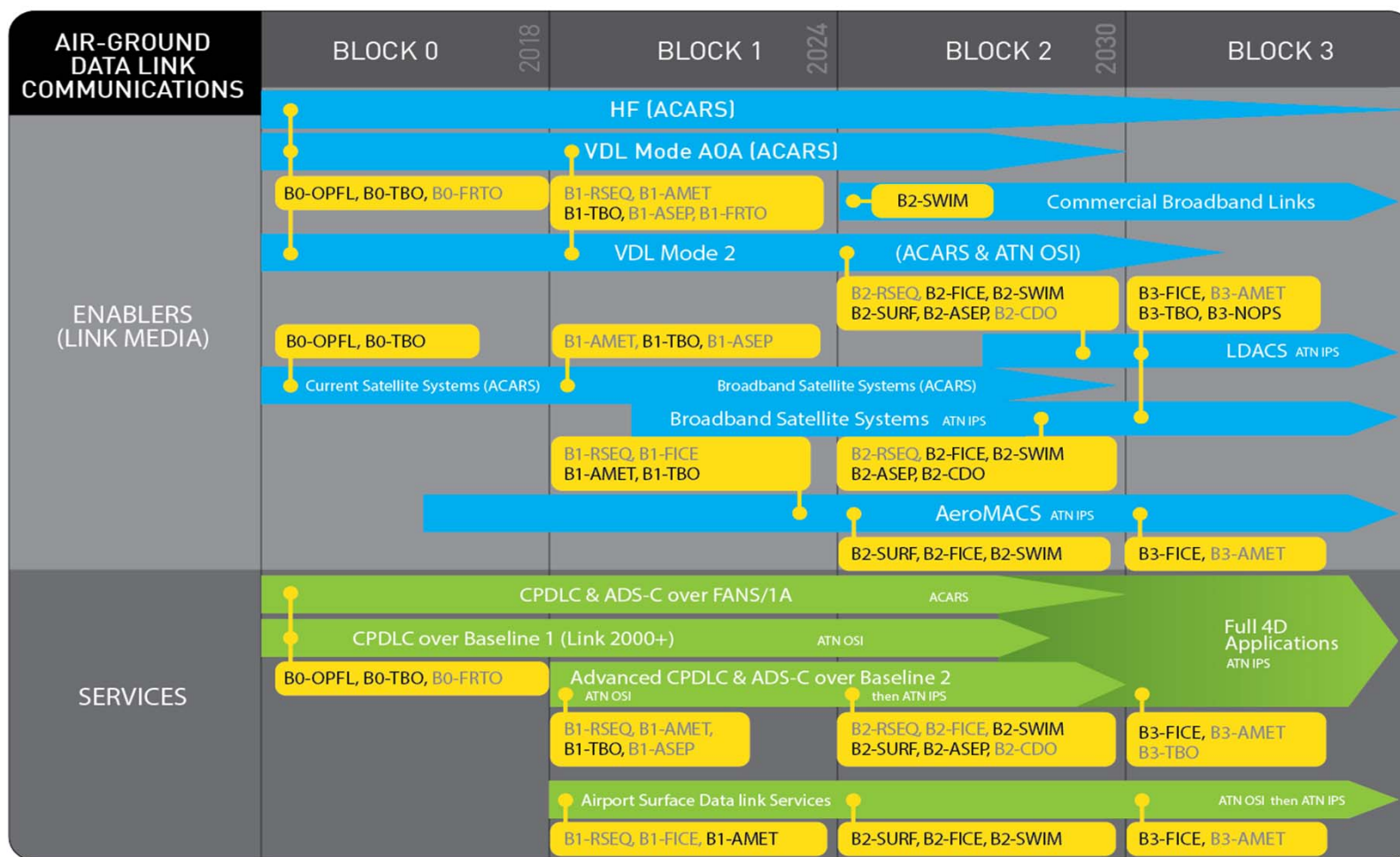
Airborne safety nets

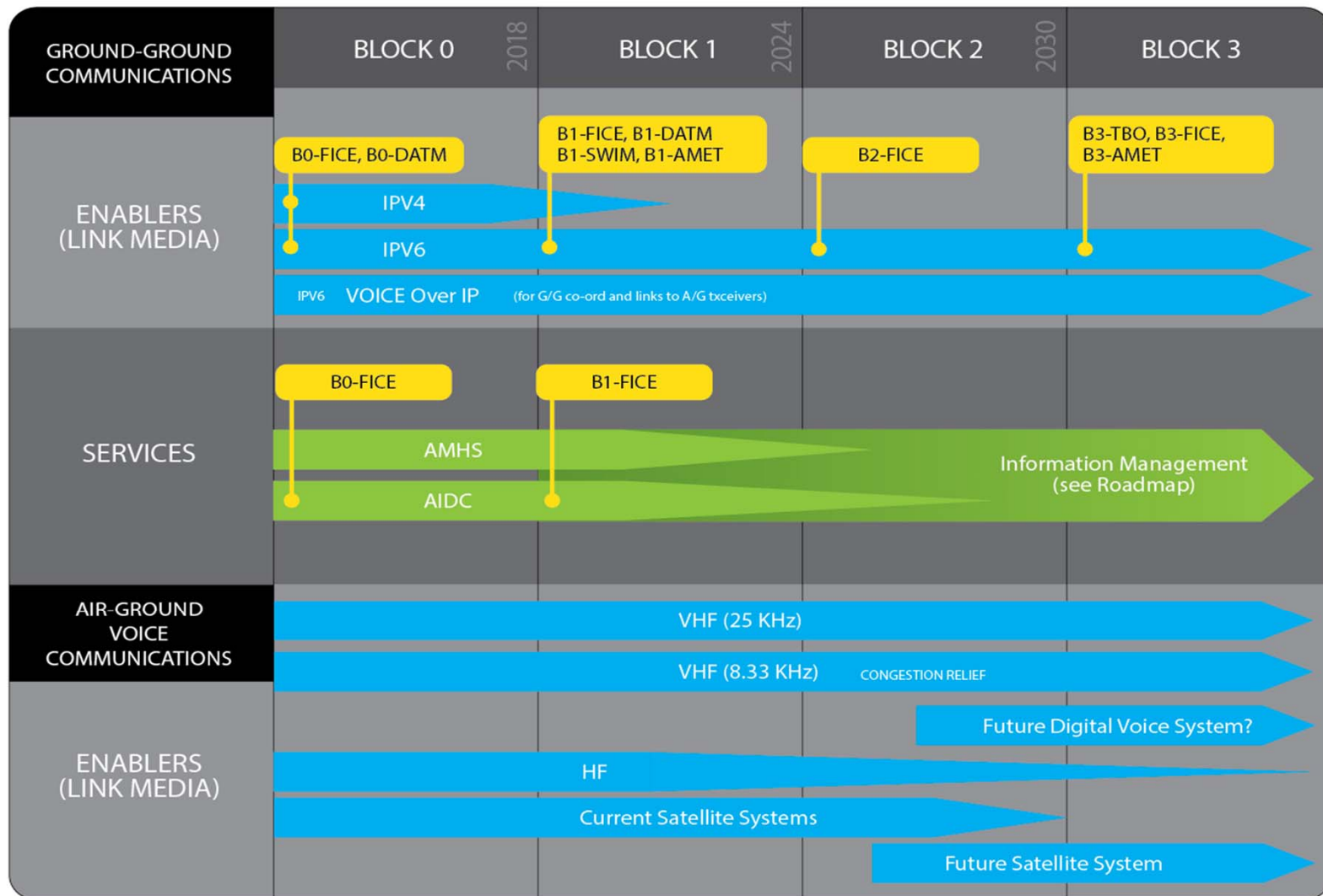
Onboard systems

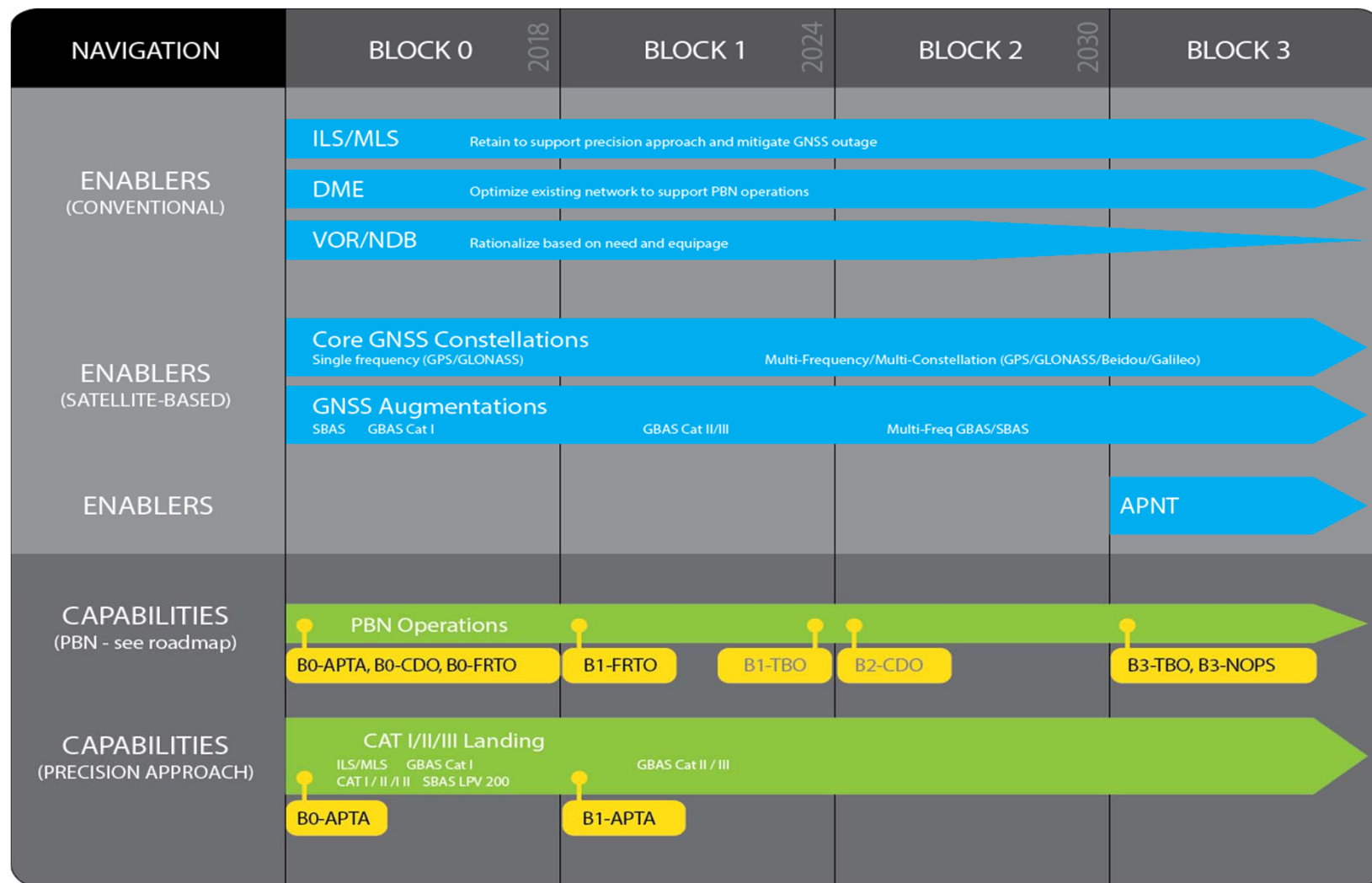


# INTRODUCTION



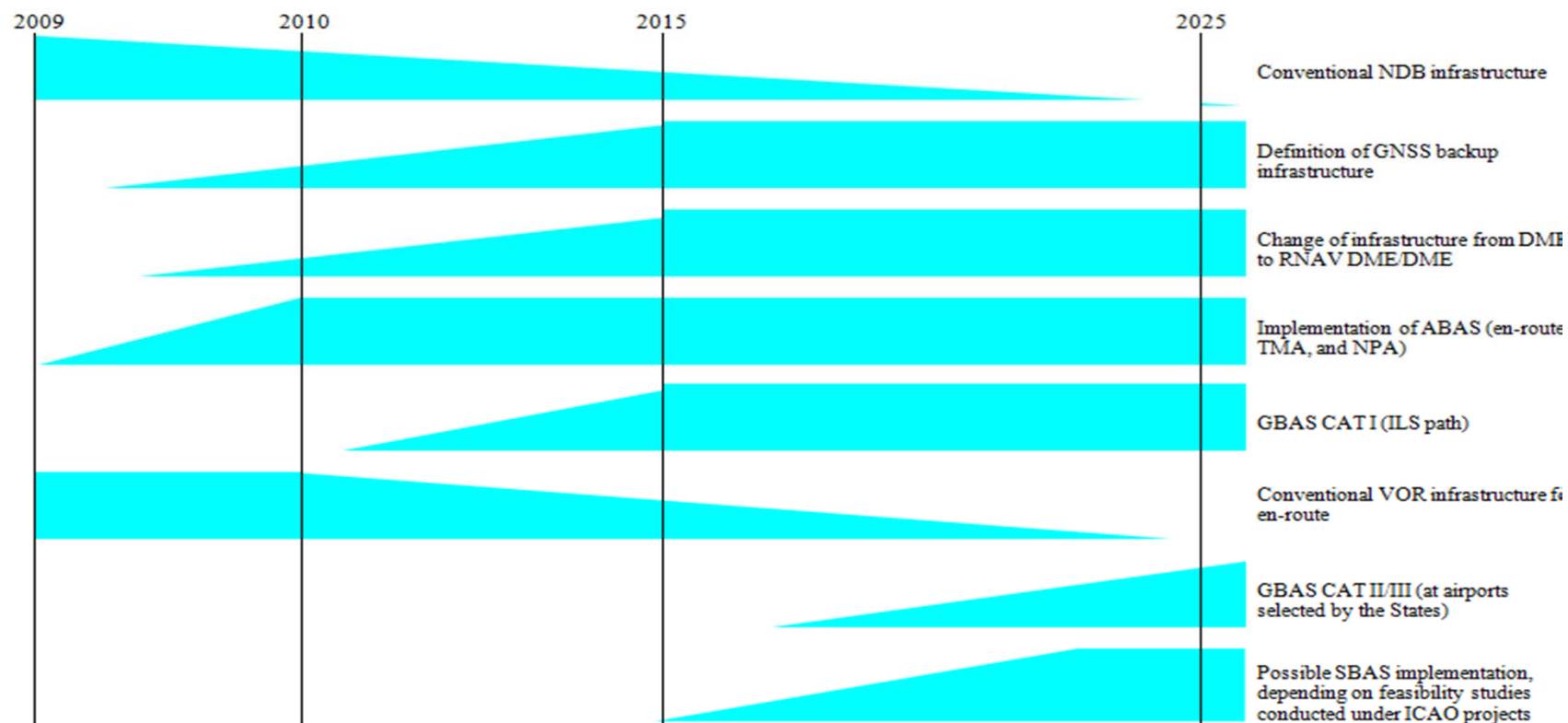


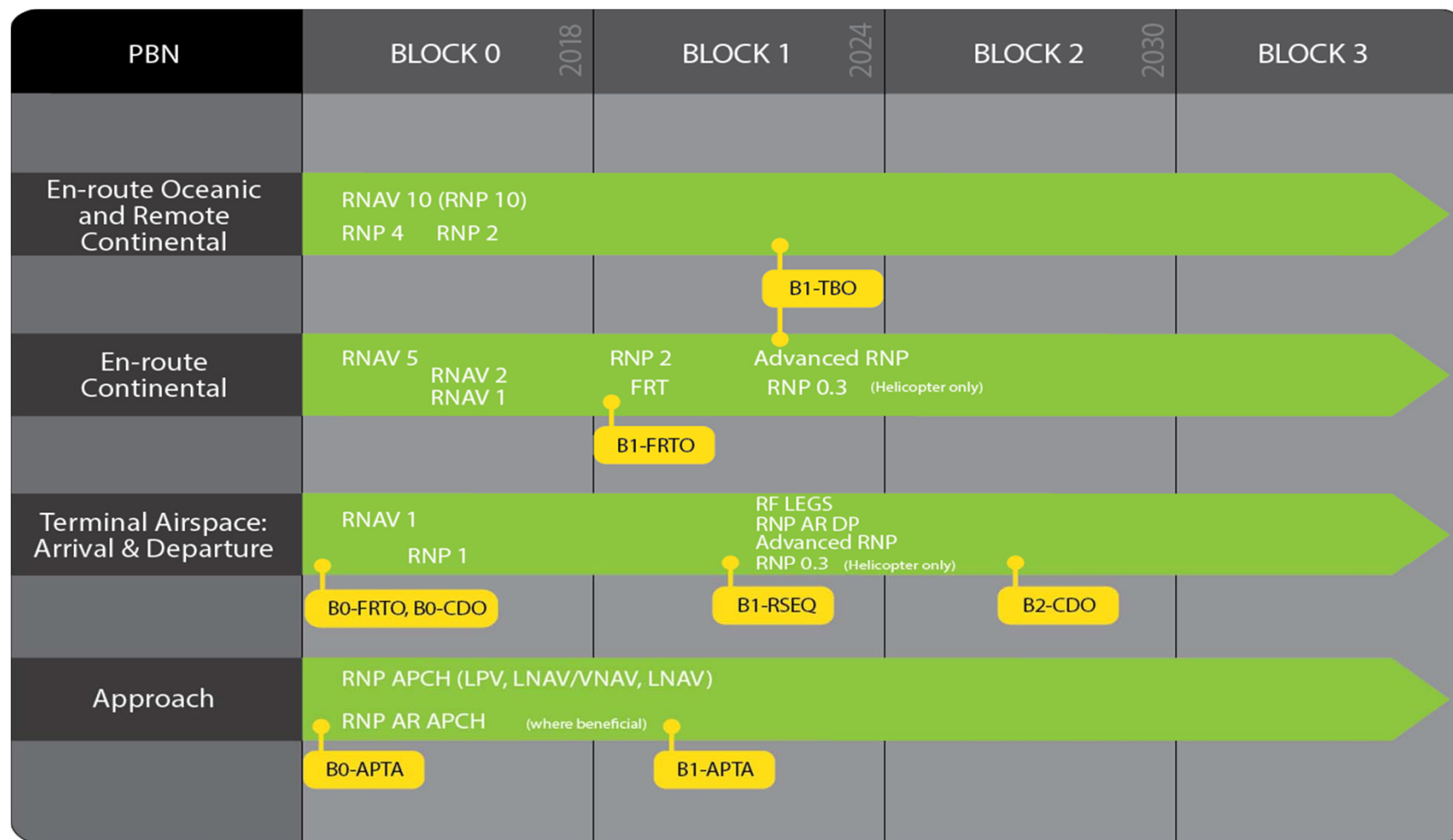






## STRATEGY EVOLUTION OF NAVIGATION SYSTEM SAM REGION: AIR NAVIGATION INFRASTRUCTURE

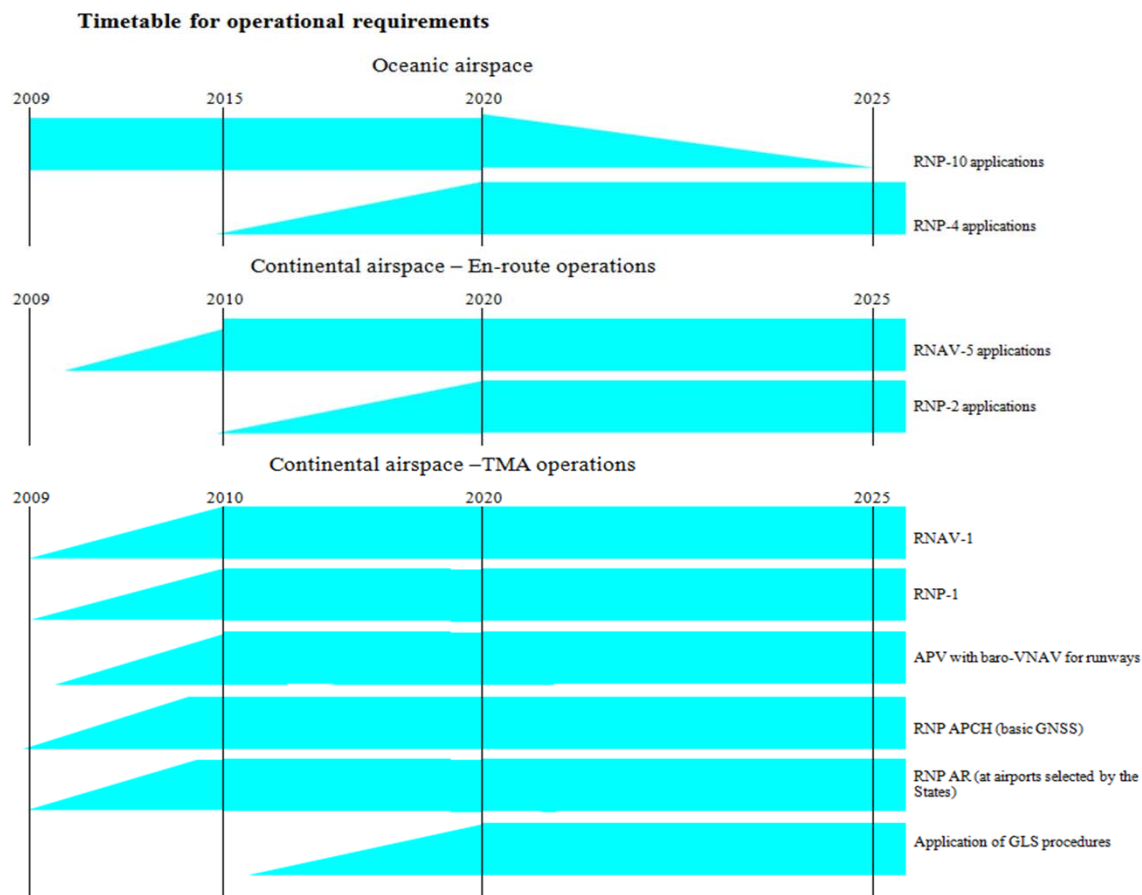






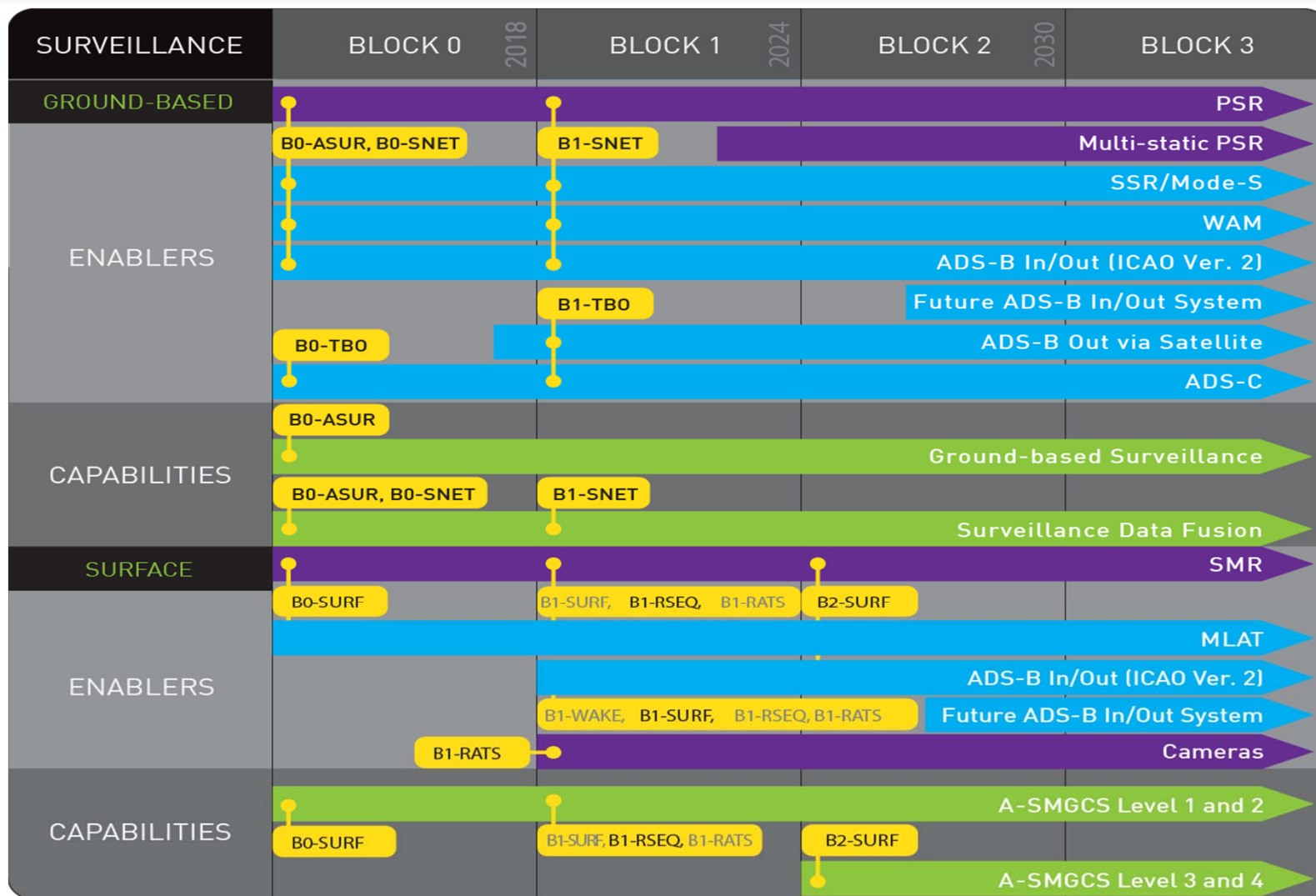


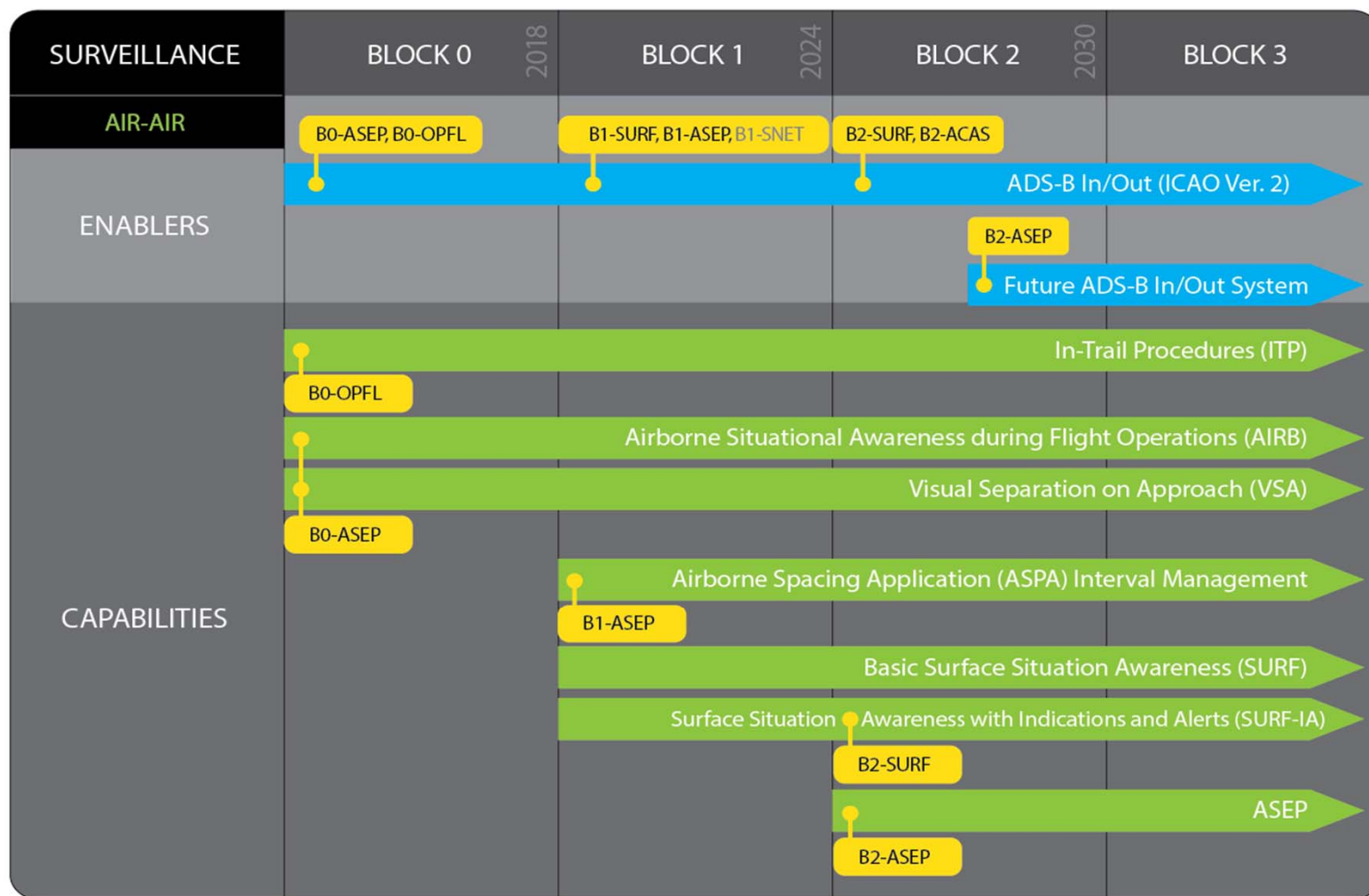
## STRATEGY EVOLUTION OF NAVIGATION SYSTEM SAM REGION: TIMETABLE OPERATIONANAL REQUIREMENTS





# SURVEILLANCE

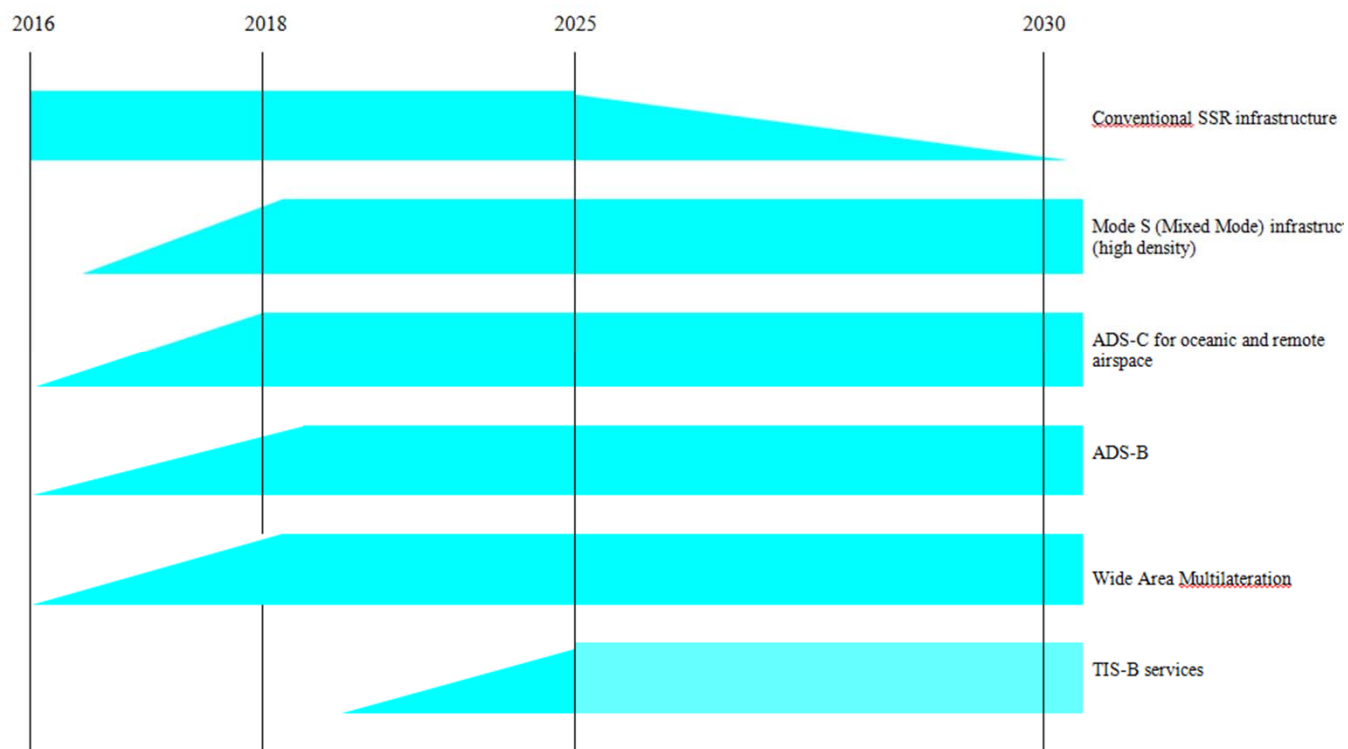






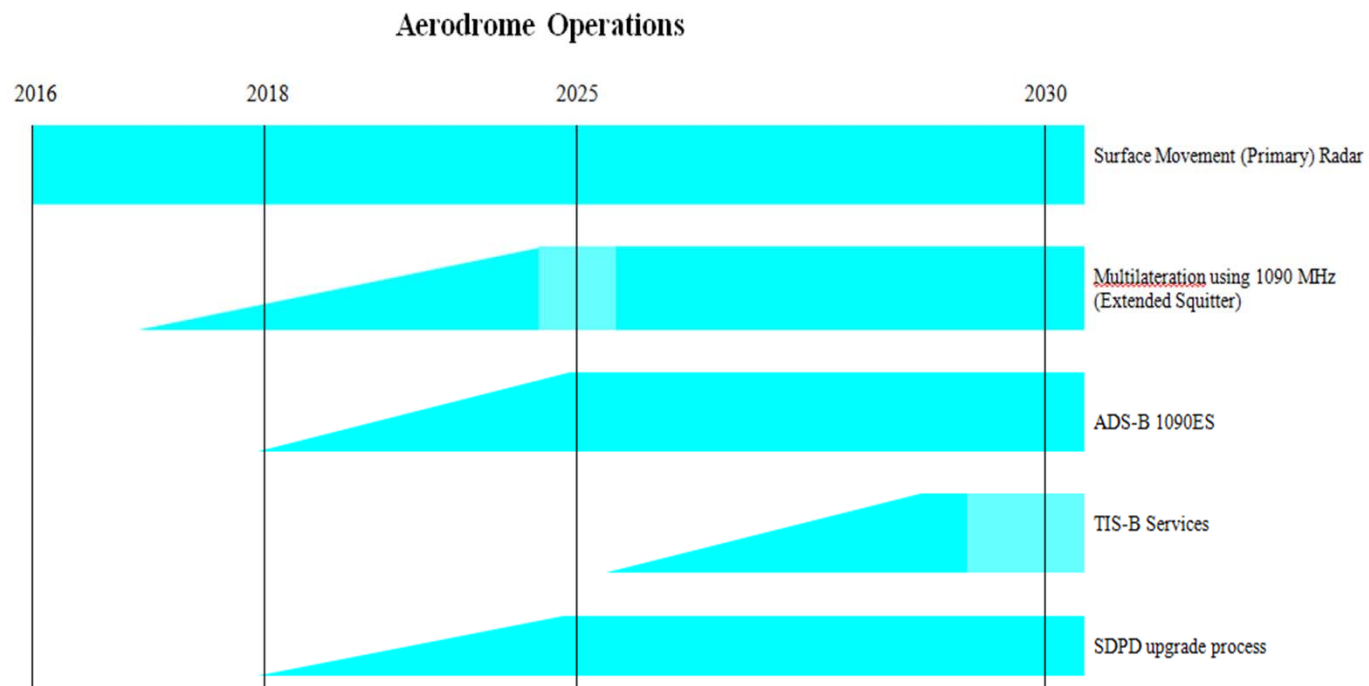
## REGIONAL SAM UNIFIED STRATEGY SURVEILLANCE : SURVEILLANCE

### En Route and TMA Airspace



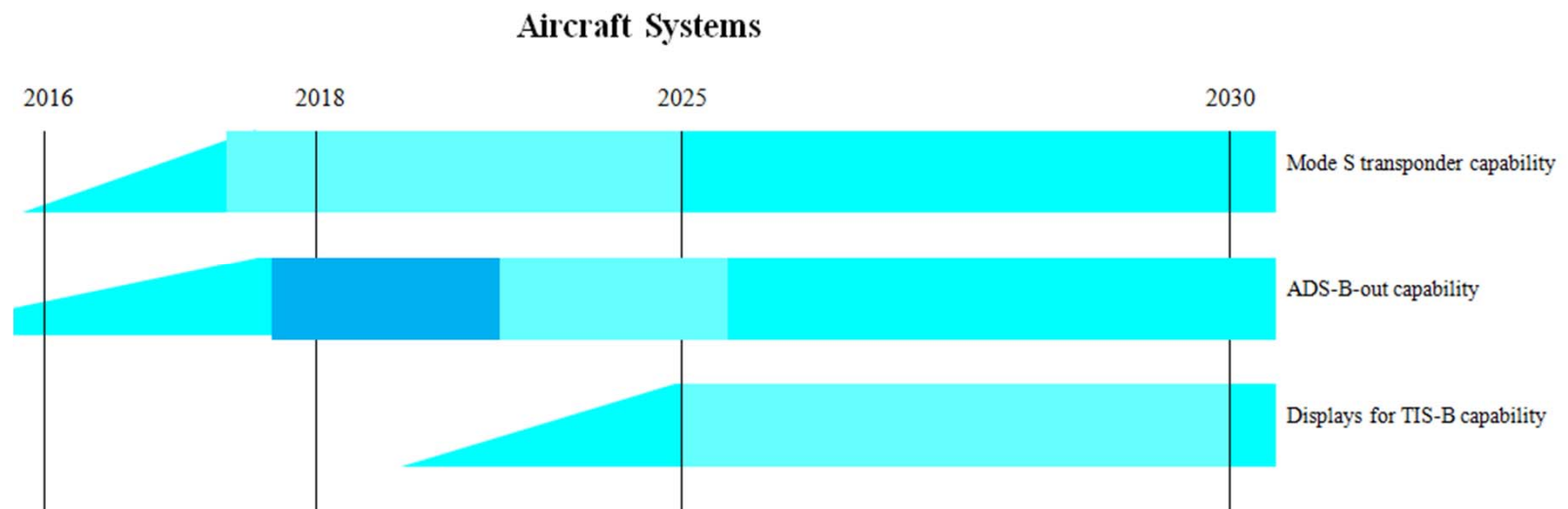


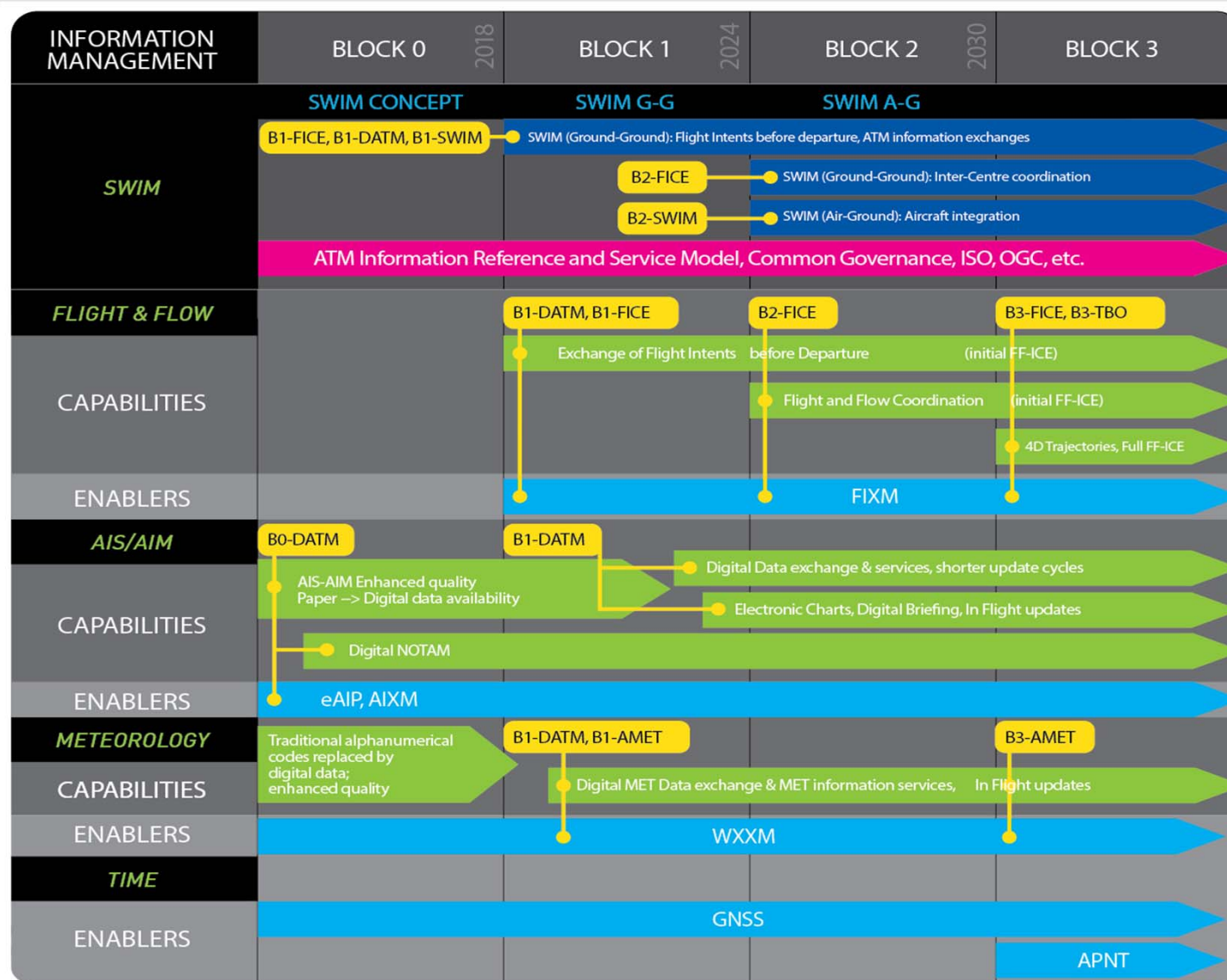
## REGIONAL SAM UNIFIED STRATEGY SURVEILLANCE : AERODROME OPERATION

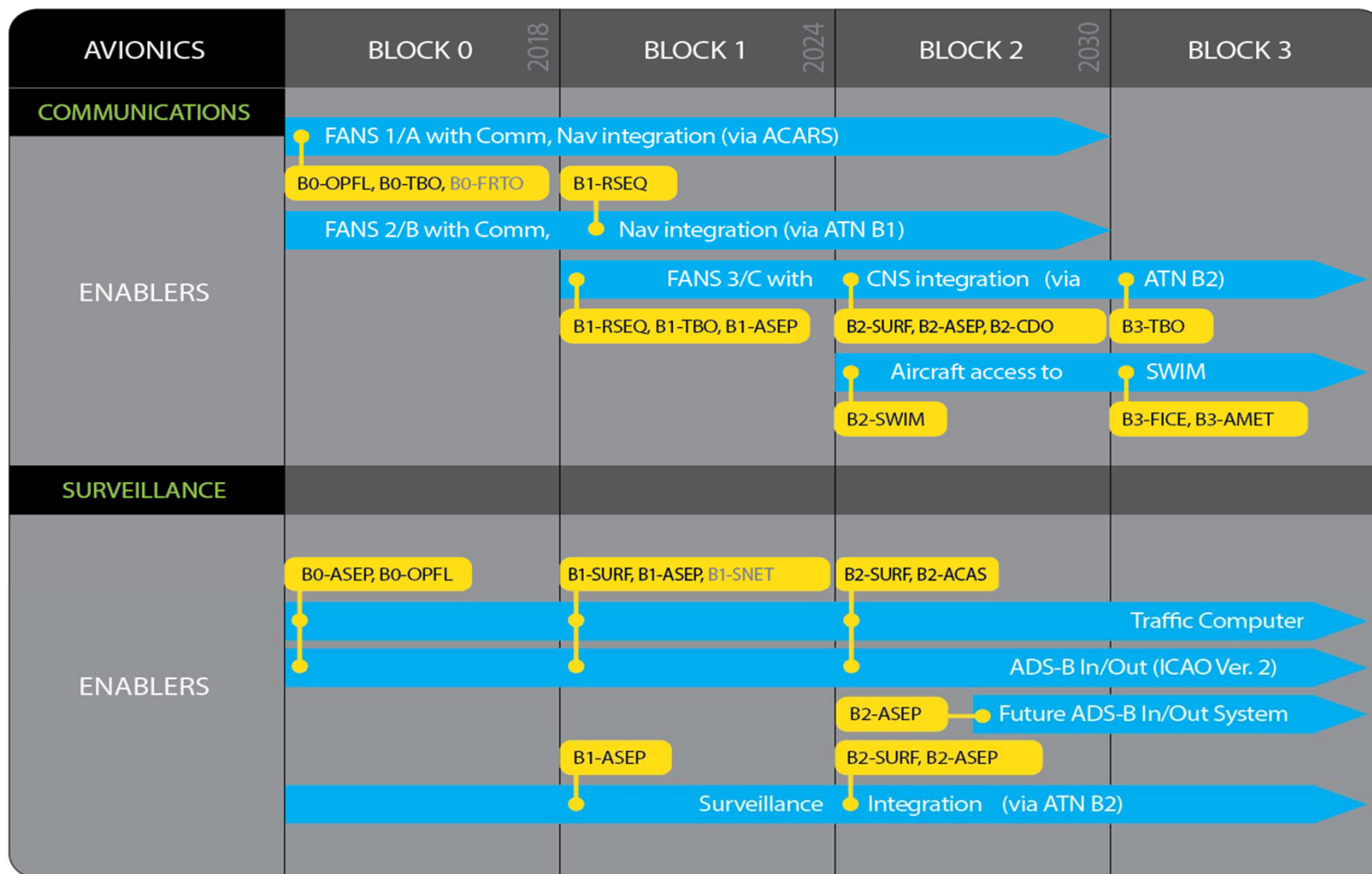




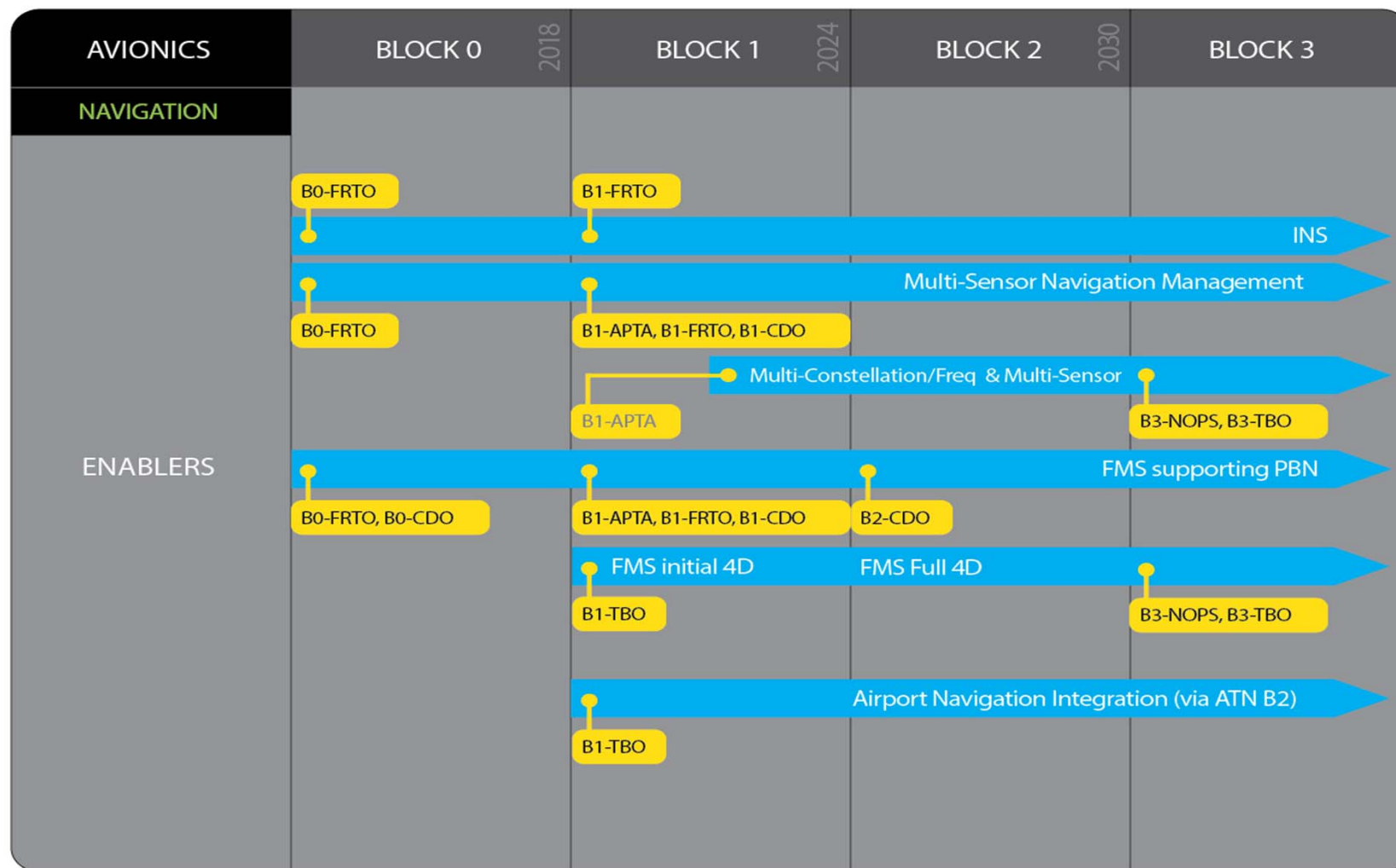
## REGIONAL SAM UNIFIED STRATEGY SURVEILLANCE : ON BOARD SYSTEM

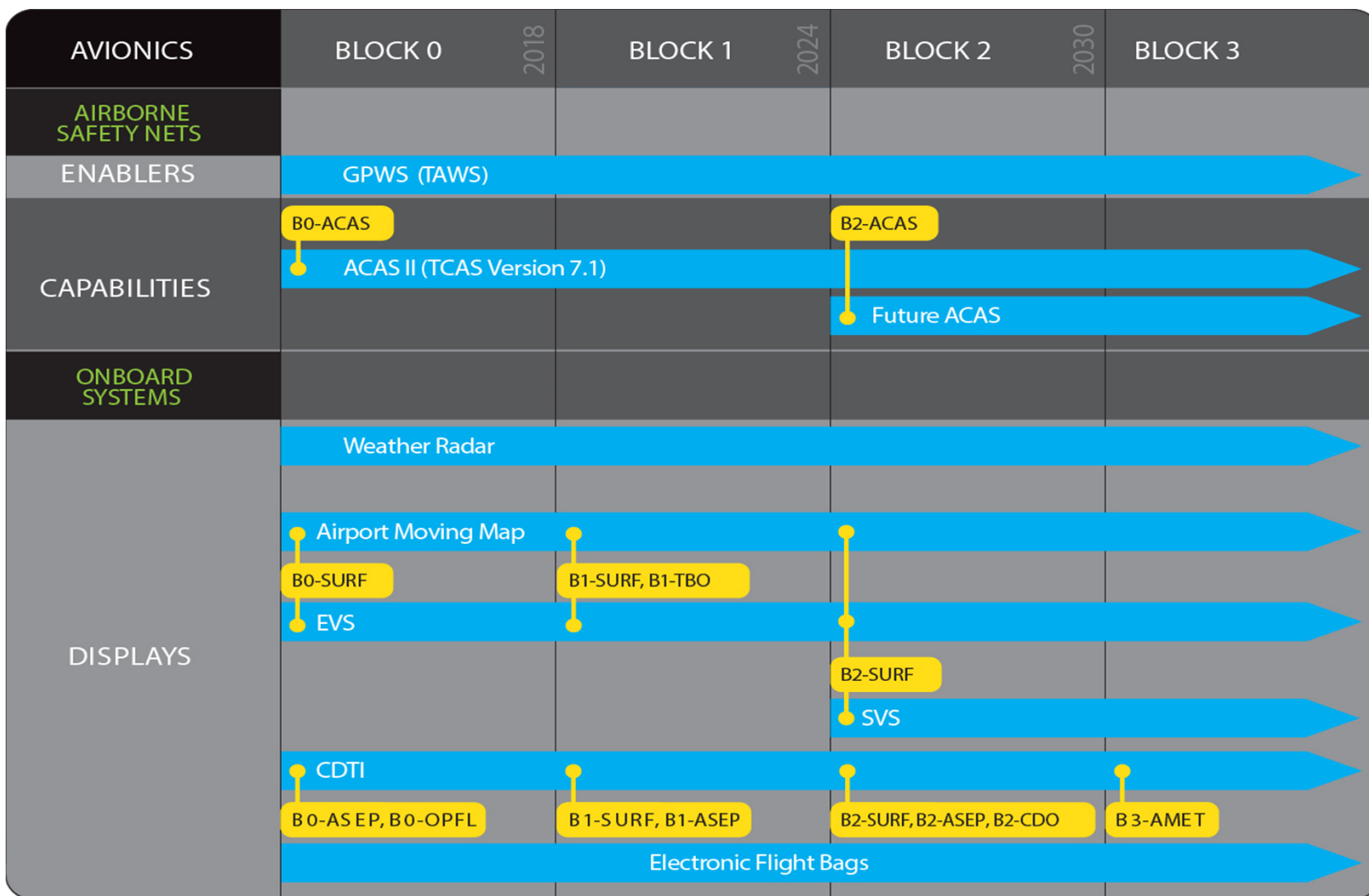














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Thank You