

# Operational improvements and Environment

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SAM ATM/SAR Regional Officer



# • VISION



# MISSION



100% effectiveness in  
traffic transfers

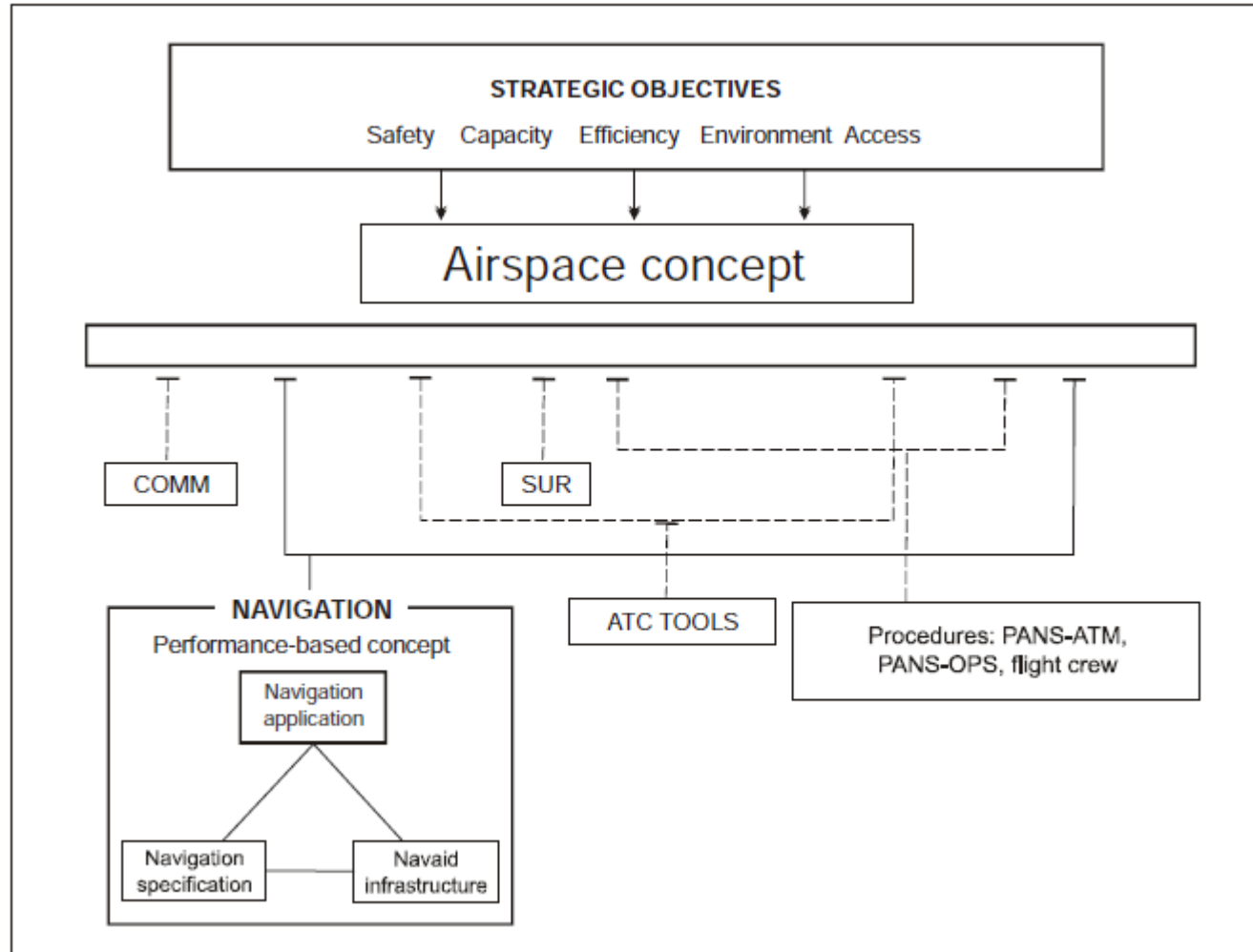
Optimization in all  
flight phases: air  
routes, terminals,  
approaches.

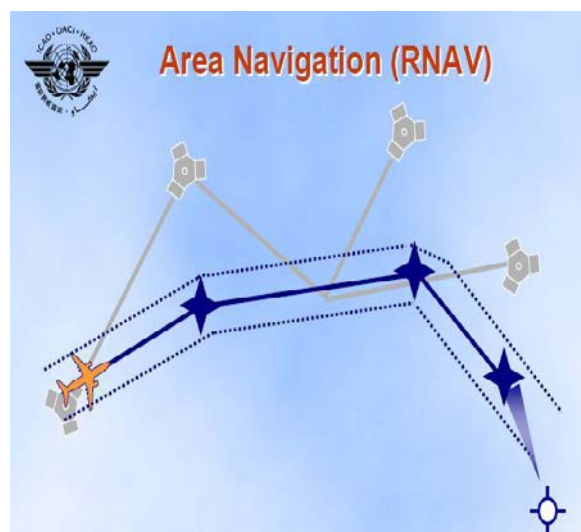
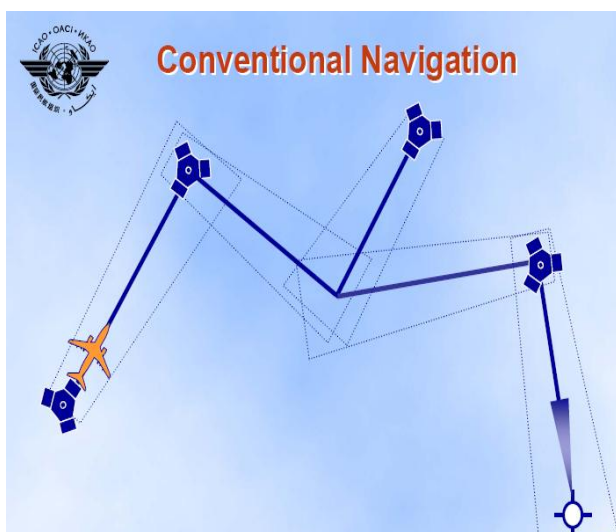
Work in collaboration  
with users

Eliminate unnecessary  
restrictions



# Strategic Objectives

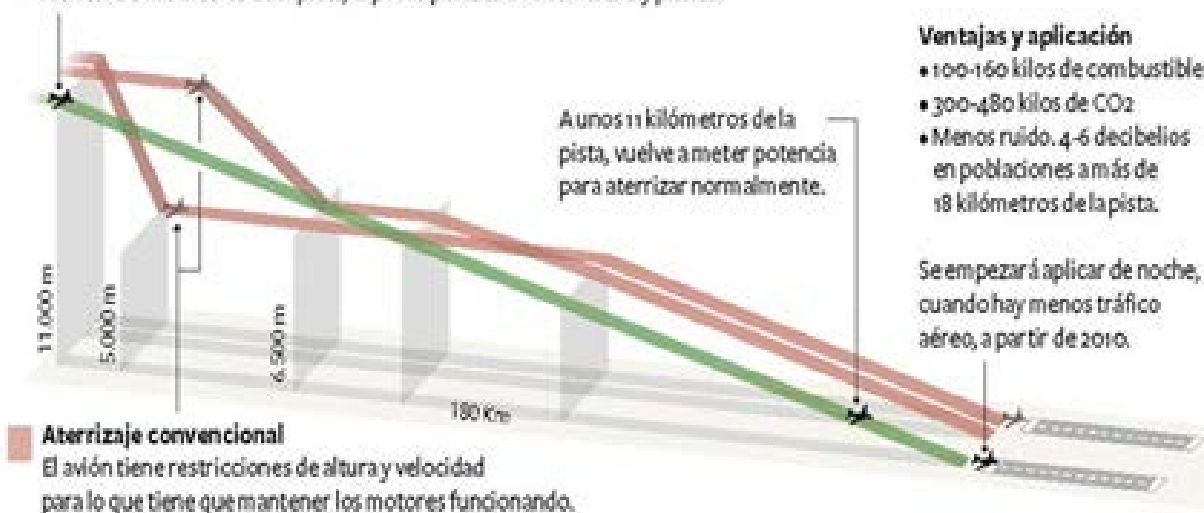




## Cambios en el protocolo de aproximación para reducir emisiones de CO<sub>2</sub>

### Aproximación en descenso continuo o "aterrizaje verde"

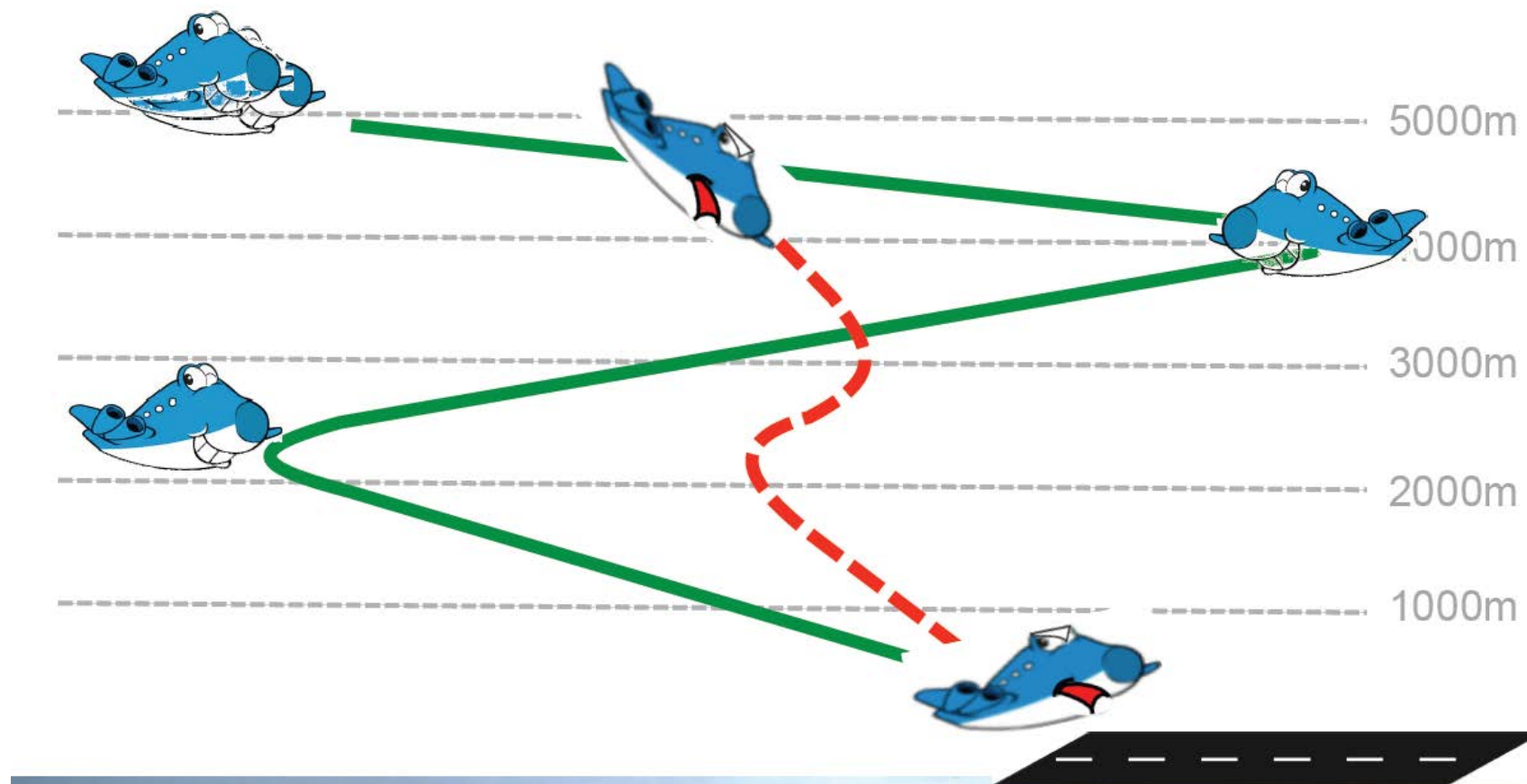
A unos 180 kilómetros de la pista, el piloto pone el avión al ralentí y planea.

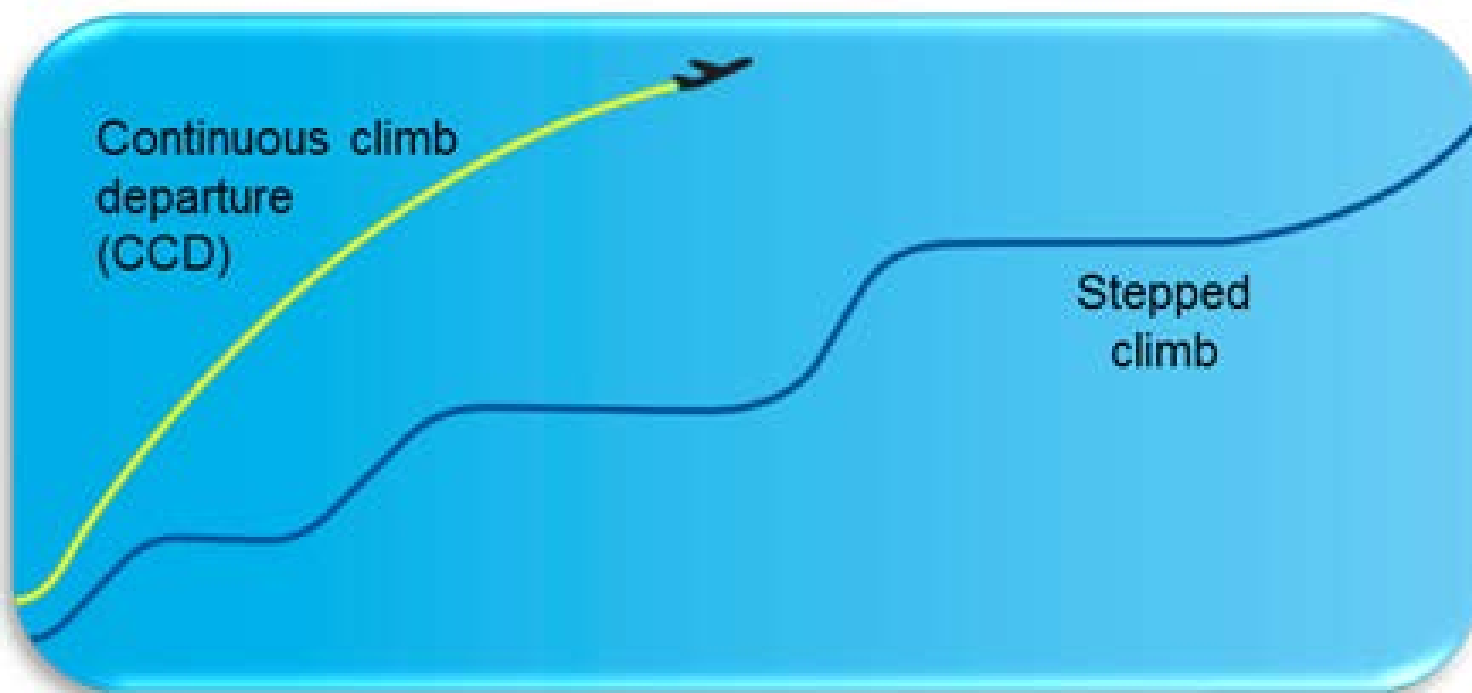


Fuente: El País de Madrid

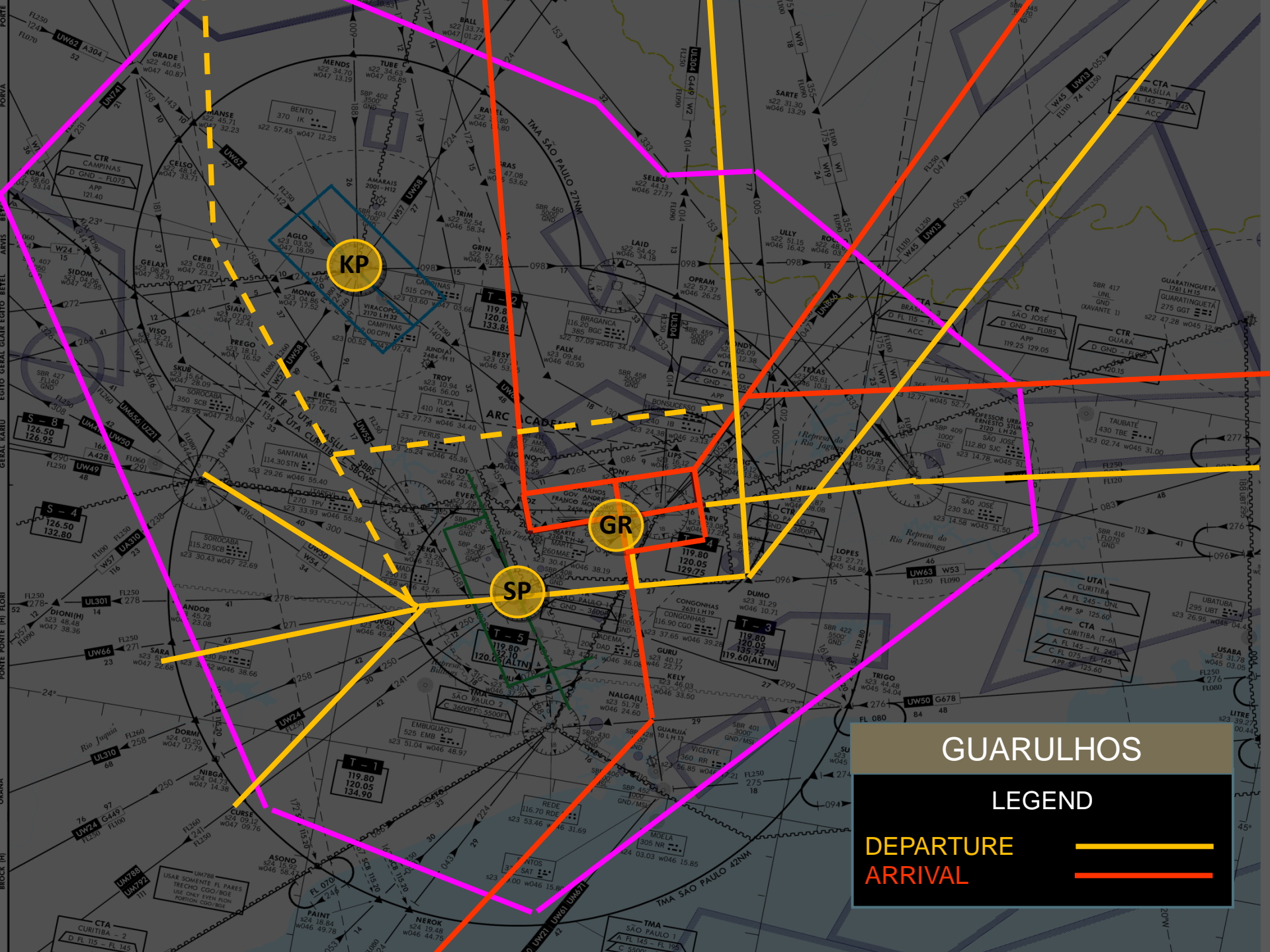








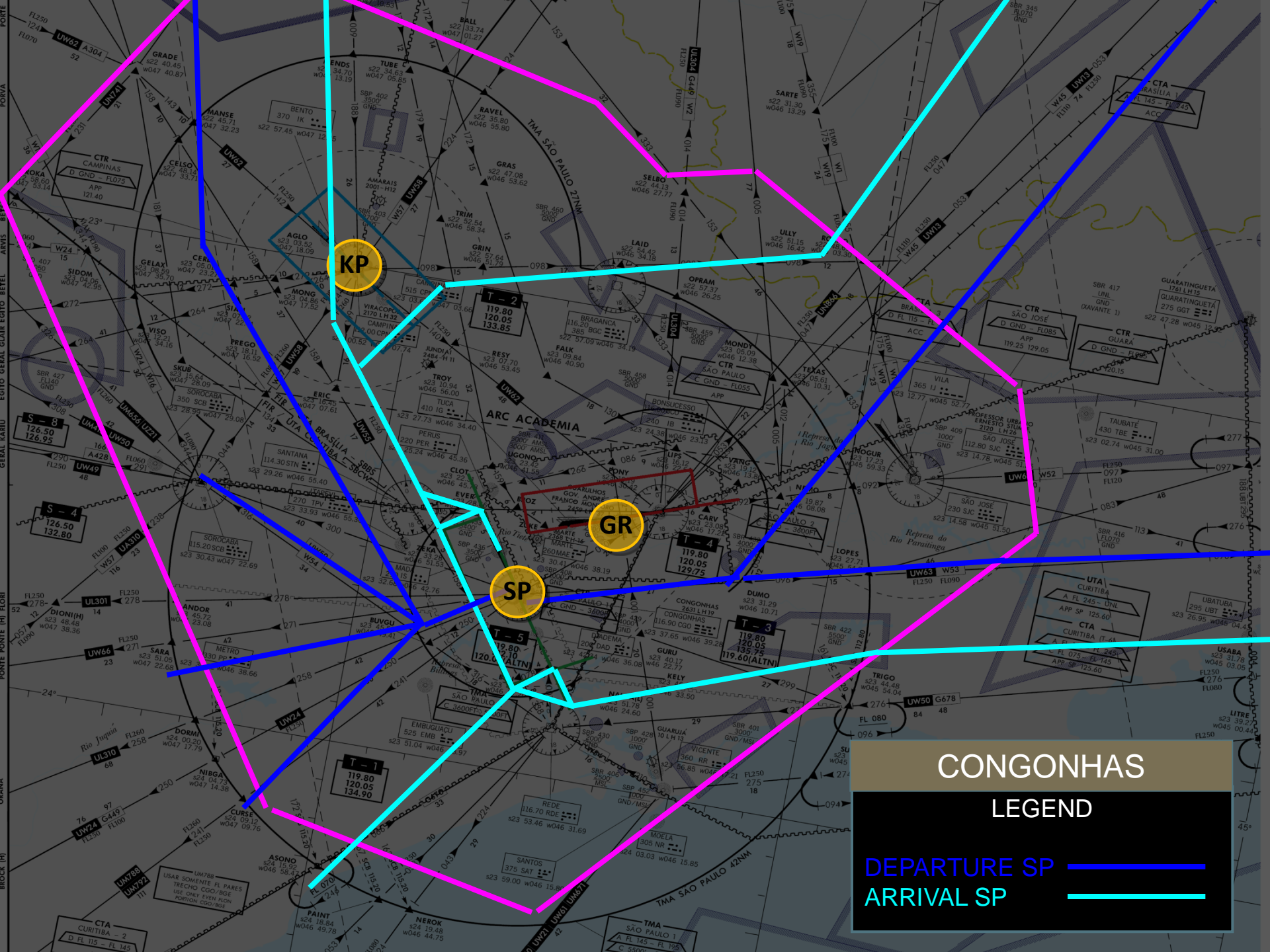




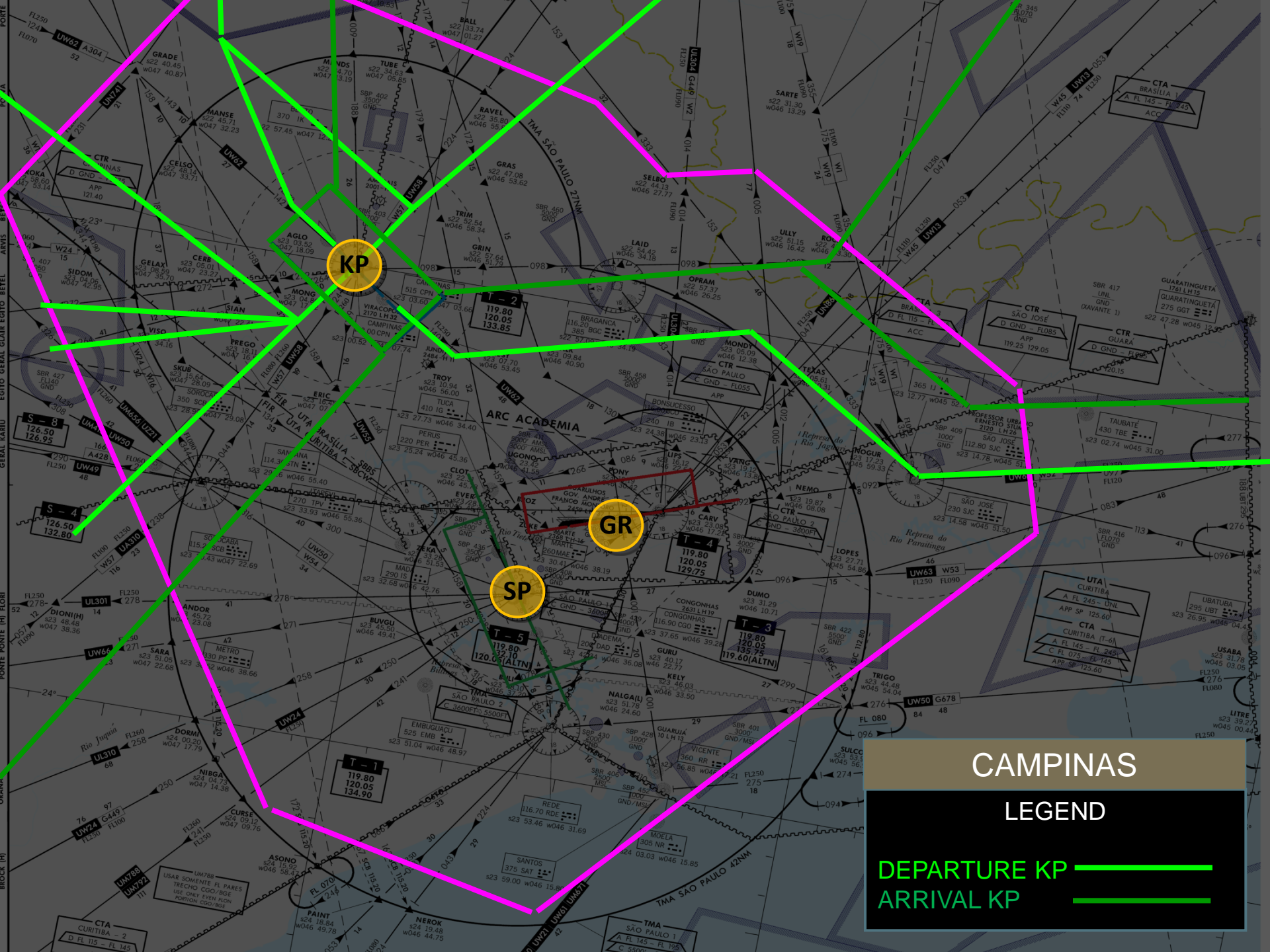
# GUARULHOS

## LEGEND

DEPARTURE ———  
ARRIVAL ———







KP

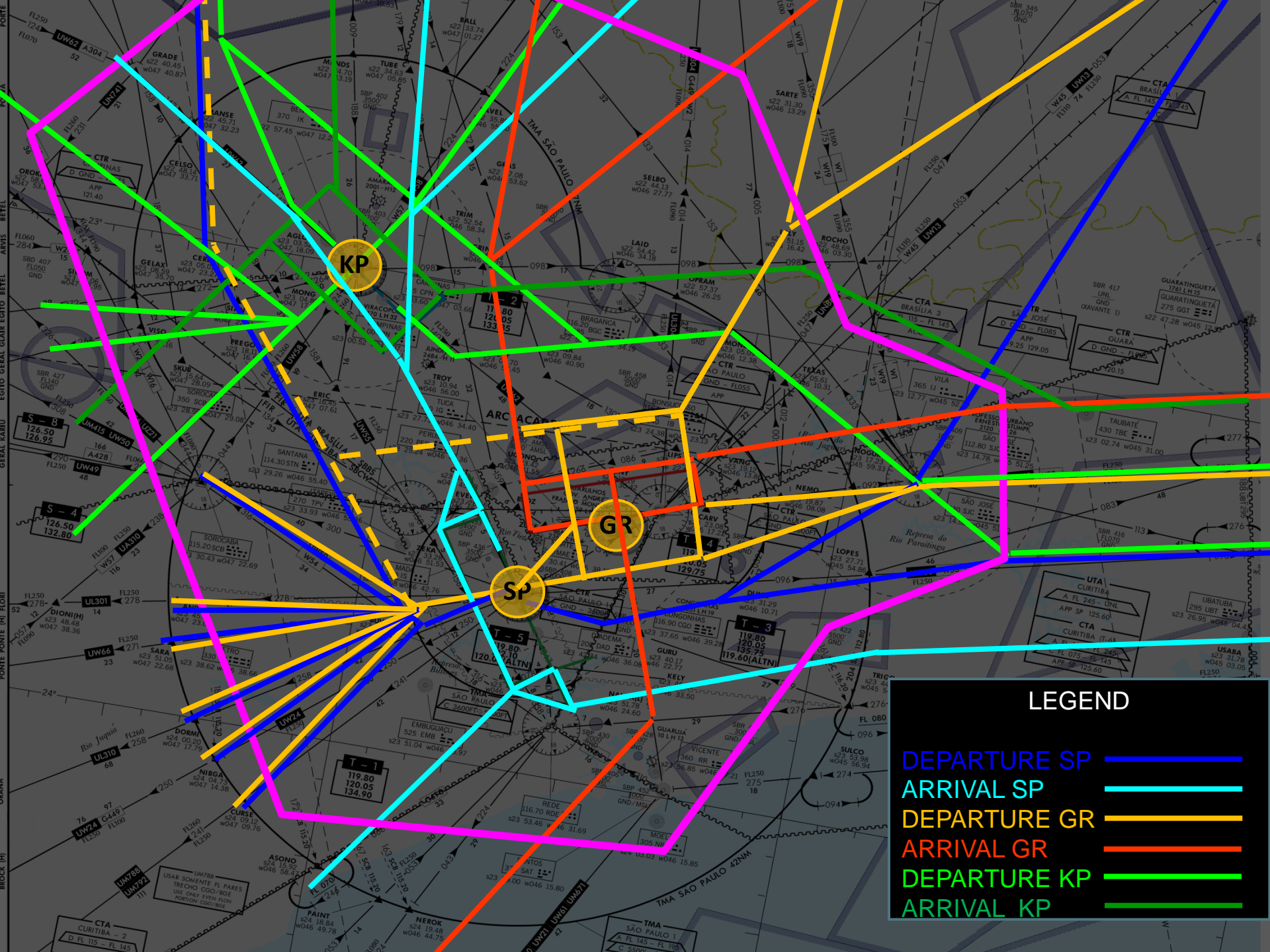
GR

SP

CAMPINAS

LEGEND

DEPARTURE KP ———  
ARRIVAL KP ———



# LEGEND

- DEPARTURE SP
- ARRIVAL SP
- DEPARTURE GR
- ARRIVAL GR
- DEPARTURE KP
- ARRIVAL KP





# Reduction of 12NM in every approach



# Performance Based Navigation (PBN)

## Project A1: PBN en-route

ASBU: B0-FRTO

Total ATS routes	PBN routes	ICAO indicator: % PBN ROUTES	ICAO indicator: % PBN ROUTES
		2014	GOAL 2016
254	95	38 %	60%





# Performance Based Navigation (PBN)

## Project A1: PBN in Terminal Area

ASBU: B0-CCO y B0-CDO

Total Airports	Total SID/STAR	Total PBN SID/STAR	ICAO indicator: % PBN SID/STAR in international airports	ICAO indicator: % PBN SID/STAR in international airports
			2014	GOAL 2016
99	1680	805	48 %	60%

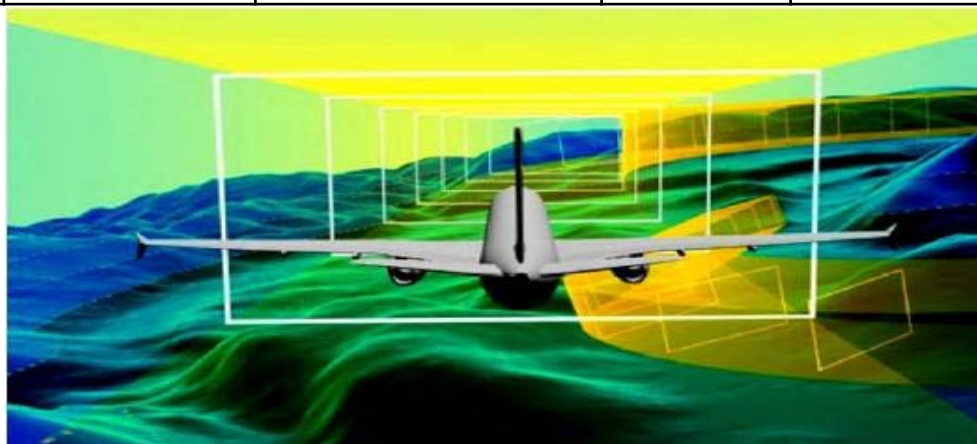
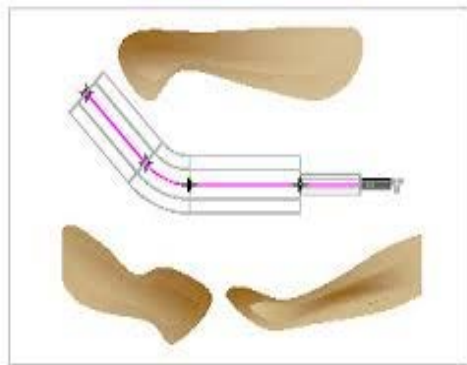


# Performance Based Navigation (PBN)

## Project A1: PBN approaches

ASBU:B0 APTA

Total International Aerodromes	Total IFR thresholds	Total IAP APV	ICAO indicator A37-11 % APV per IFR runways 2013	ICAO indicator A37-11 % APV per IFR runways	
				GOAL 2014	GOAL 2016
99	175	107	<b>61%</b>	<b>70%</b>	<b>100%</b>



# Performance Based Navigation (PBN)

## Project A1: Environmental benefits

ASBU: B0-CCO, B0-CDO, B0-APTA, B0-FRTO

- Emissions reduction



40.000 tons per year





# Air Traffic Flow Management (ATFM)

## Project B1: balance between demand and capacity

ASBU: B0-NOPS





ICAO

ENVIRONMENT

Action Plan  
on Emissions  
Reduction



North American  
Central American  
and Caribbean  
(NACC) Office  
Mexico City

South American  
(SAM) Office  
Lima

ICAO  
Headquarters  
Montreal

Western and  
Central African  
(WACAF) Office  
Dakar

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Office  
Bangkok

Thank You

