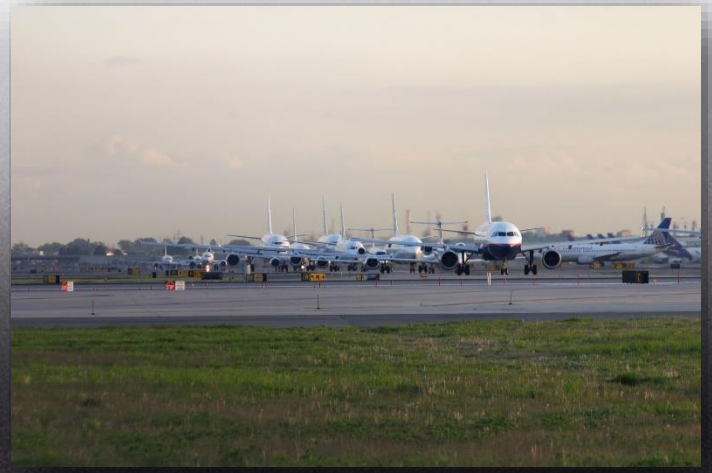
A-CDM

PERSPECTIVA REGIONAL



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AGENDA

- **Origen del A-CDM**
- **A-CDM, el Modelo Operativo**
- **A-CDM, Fases de Implementación**
  - ***Information Sharing***
  - ***Milestone Approach***
  - ***Variable Taxi Time / Pre-Departure Sequencing***
- **A-CDM en Acción**
- **A-CDM, Desafíos Regionales**

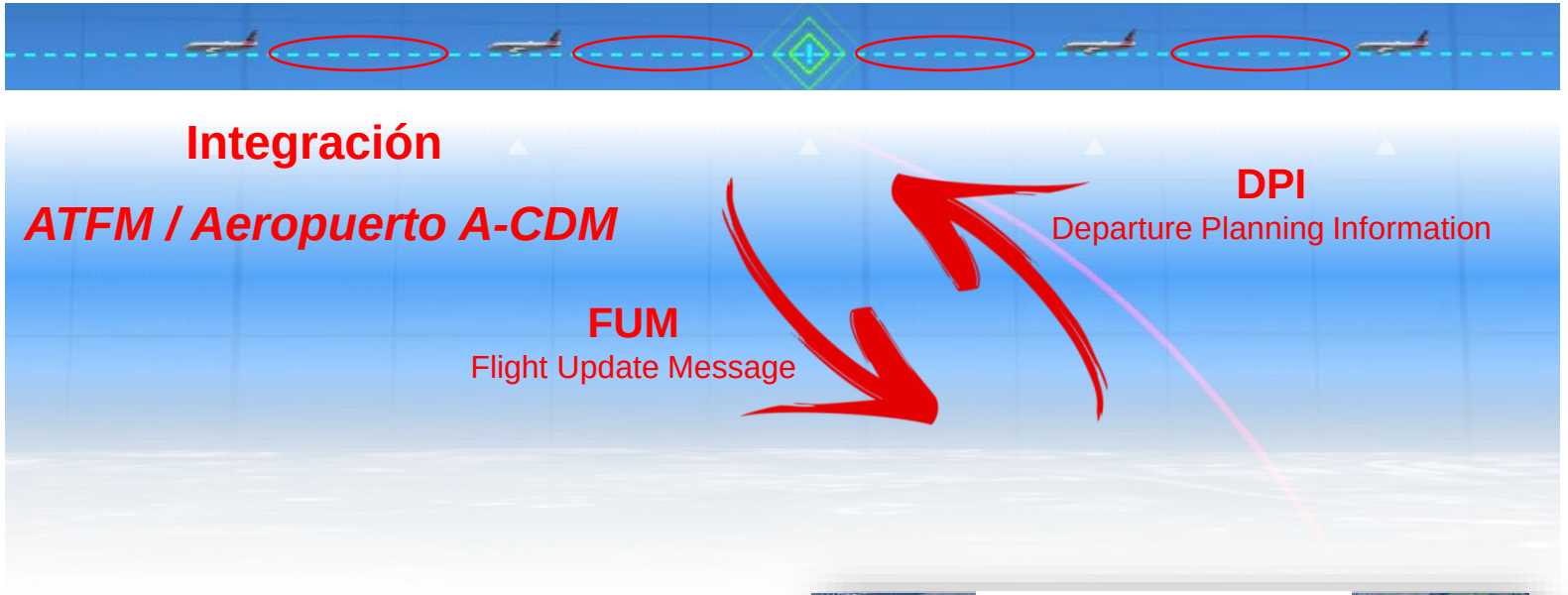
ORÍGEN DEL A-CDM

ATFM - Gestión de Flujo

Desafío de la Eficiencia Integrada

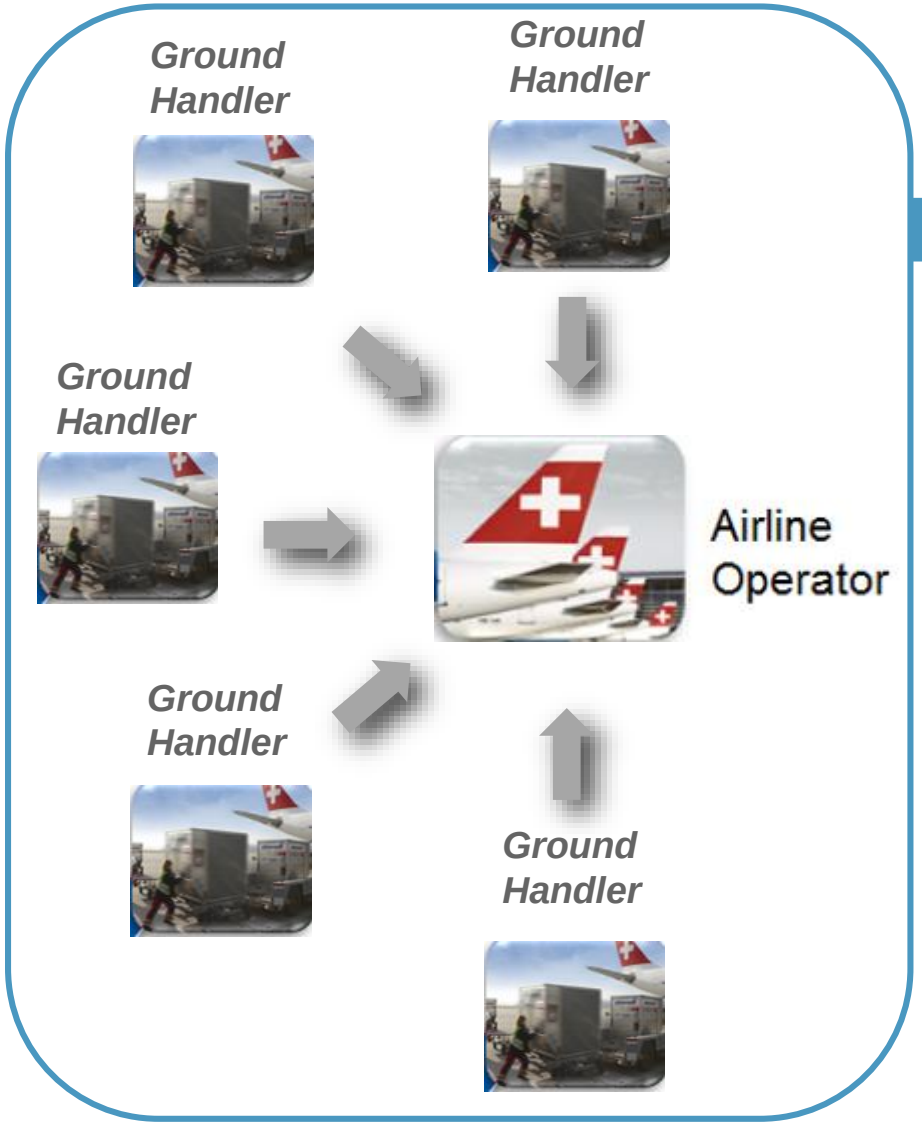
ORÍGEN DEL A-CDM

ATFM - Gestión de Flujo



Desafío de la Eficiencia Integrada

A-CDM, EL MODELO OPERATIVO



Operación Tradicional

- ✓ Best Effort
- ✓ Modo *ASAP*
- ✓ *"First called, First Served"*

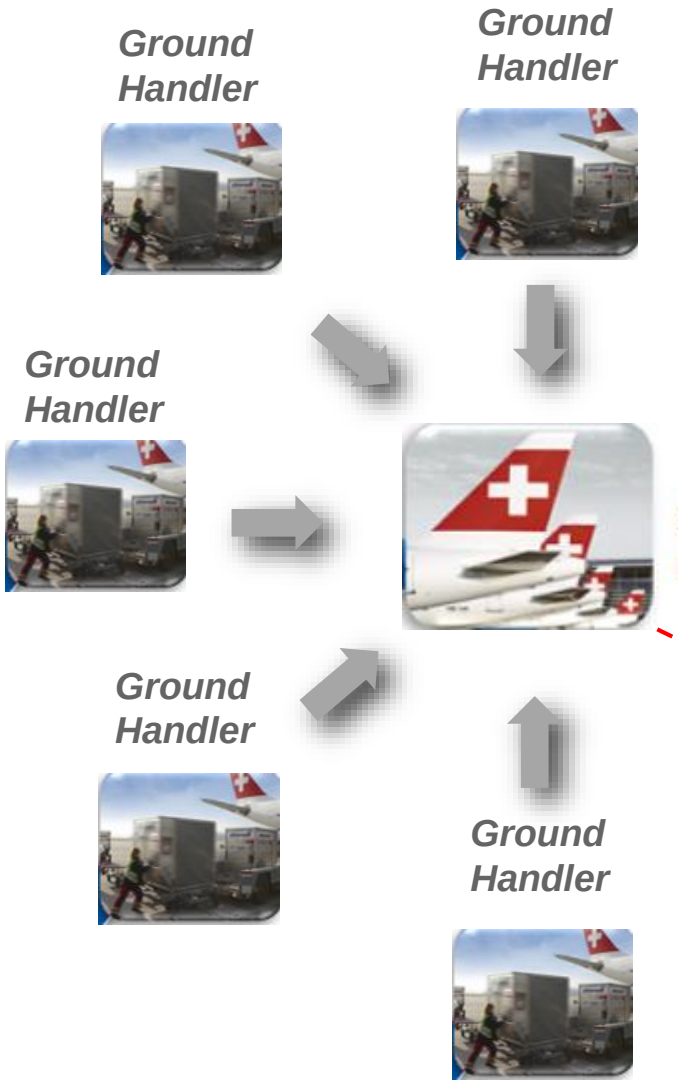
ESTIMADOS		REALES
EOBT	Off-Block	AOBT
ETD	Departure	ATD

RETRASO

- Esfuerzo INTERNO Líneas Aéreas/Ground Handlers
- Sin interacción, en tiempo real, con el mundo EXTERNO

A-CDM, EL MODELO OPERATIVO

Operación A-CDM



EOBT
Estimated **Off-Block** Time

TOBT
Target **Off-Block** Time

TARGETS

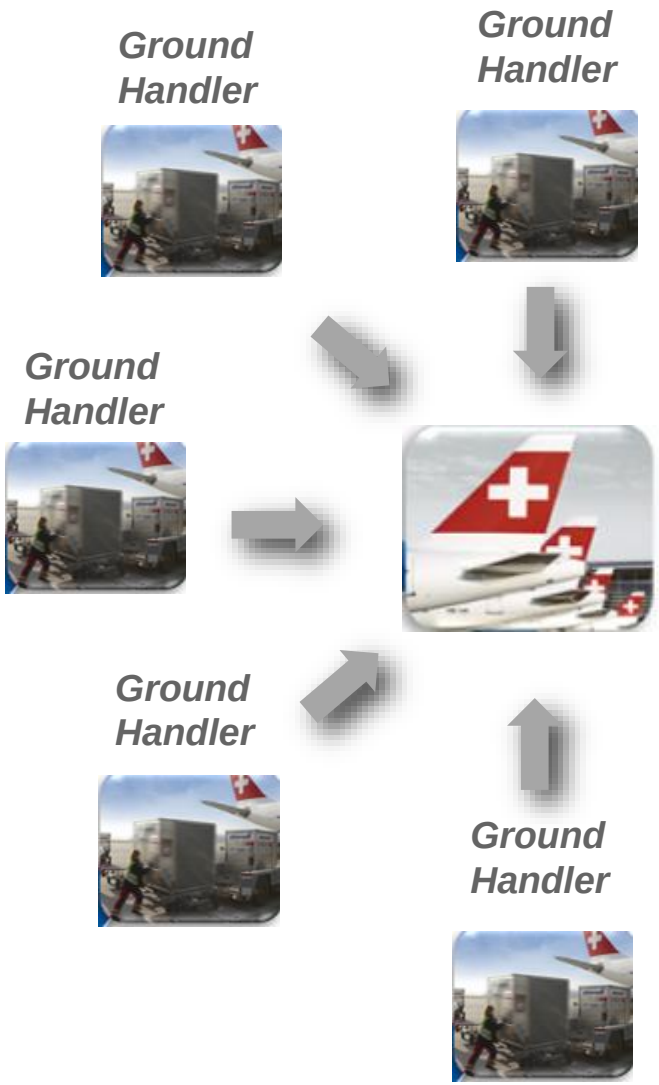
Desde 3 horas antes del EOBT

Airport Operator

ATC Tower

Esfuerzo **CONJUNTO** (Líneas *Aéreas/Ground Handlers*) para **PREDICCIÓN DINÁMICA** de horario de **PRONTITUD** de cada vuelo

A-CDM, EL MODELO OPERATIVO



Operación A-CDM

- ✓ Reducción de **Flexibilidad Individual** de las Líneas Aéreas
- ✓ Aumento de **Disponibilidad Global** de recursos
- ✓ "***Best Planned, Best Served***"

TARGETS

EOBT
Estimated Off-Block Time

TOBT
Target Off-Block Time

TSAT
Target Start-up Approval Time

Horario en que el vuelo deberá ser **autorizado** a iniciar ***Push-Back*** **yTaxi**

- 5 min — TSAT — + 5 min

PDS
DMAN

Airport Operator

ATC Tower

A-CDM, FASES DE IMPLEMENTACIÓN

- **Conjunto de iniciativas** dedicadas a promover el aumento drástico de **Consciencia Situacional** entre los *stakeholders*
- Implementación de un proceso de **monitoreo de marcos** (*Milestones*) dedicado a apoyar las **compañías aéreas** en las **asignación de TOBTs**
- **Secuenciación de *start-up & push-back*** (y respectivo despegue), utilizando el concepto de **VTT** (***Variable Taxi Times***) y un aplicativo específico - *Pre Departure Sequencer* (**PDS**) o *Departure Manager* (**DMAN**)
- Operación en condiciones adversas. **No es relevante** en nuestra región, debido a que no necesitamos contemplar la tarea de ***De-icing***
- Integración Aeropuerto / ATFM de acuerdo al Modelo Operativo A-CDM. **No se aplica a nuestra región**, debido a que no tenemos un servicio **ATFM Global habilitado a operar en ambiente A-CDM**

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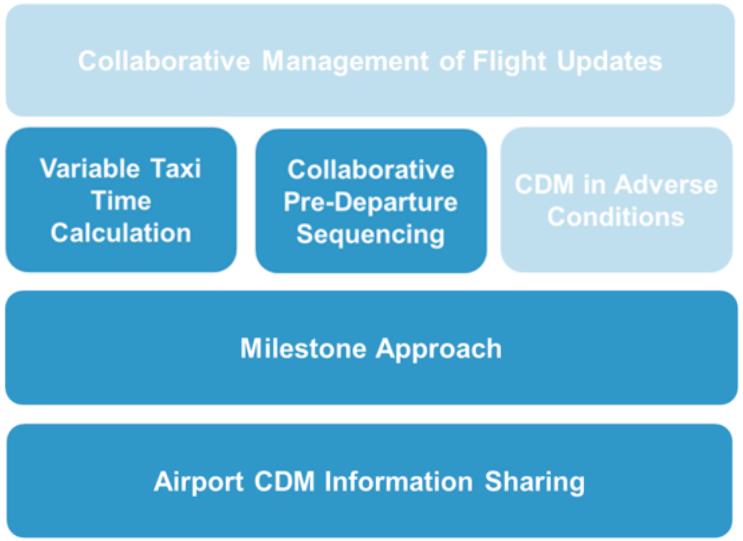

A-CDM, FASES DE IMPLEMENTACIÓN

- ✓ Secuenciación start-up & pushback **TSATs** (ATC)
- ✓ Asignación de **TOBTs** (Líneas Aéreas)
- ✓ Aumento de **Consciencia Situacional**

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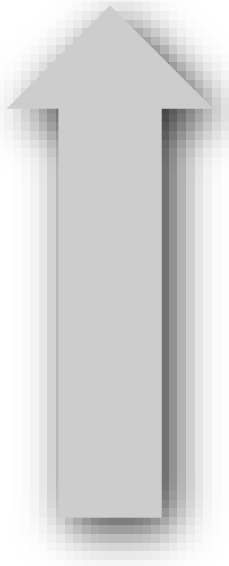

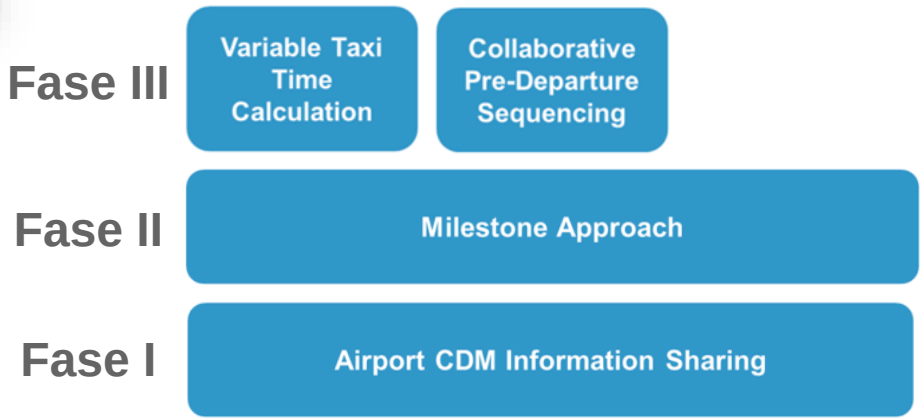

A-CDM, FASES DE IMPLEMENTACIÓN

Se recomienda implementar los *Concept Elements* del Airport CDM **de acuerdo con el orden en el Manual de Implementación .**

Si bien es **beneficioso en sí mismo**, es esencial implementar el ***Information Sharing*, antes de los demás *Concept Elements*** del Airport CDM.

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Airport CDM Implementation Manual

Fase III	Variable Taxi Time Calculation	Collaborative Pre-Departure Sequencing
Fase II	Milestone Approach	
Fase I	Airport CDM Information Sharing	

SAAB

Saab recomienda adoptarse el ***Information Sharing*** cómo **acción previa** a una **cualquier implementación A-CDM**

FASE I - *INFORMATION SHARING*

ATC

Airline Operator

Operación Tradicional

NMOC

Ground Handling

Airport Operation

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Airport CDM Implementation Manual

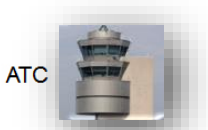
Variable Taxi Time Calculation

Collaborative Pre-Departure Sequencing

Milestone Approach

Airport CDM Information Sharing

FASE I - *INFORMATION SHARING*



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Airport CDM Implementation Manual

Variable Taxi Time Calculation

Collaborative Pre-Departure Sequencing

Milestone Approach

Airport CDM Information Sharing

FASE I - *INFORMATION SHARING*

ACISP (**A-CDM** *Common Information Sharing Platform*)

Airport Management Systems

ATC Systems

Airline Systems

Weather Systems

Surface Surveillance

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Airport CDM Implementation Manual

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Airport CDM Information Sharing

FASE I - *INFORMATION SHARING*

ACISP (**A-CDM** *Common Information Sharing Platform*)

Airport Management Systems

ATC Systems

Airline Systems

Weather Systems

Surface Surveillance

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Airport CDM Information Sharing

FASE I - *INFORMATION SHARING*

Visión de SAAB

Aviation System Block Upgrades

B0 (2013)

SURF

First levels of advanced-surface movement guidance and control systems (A-SMGCS) provides **surveillance and alerting** of movements of both aircraft and vehicles on the aerodrome thus **improving runway/aerodrome safety**. **Automatic dependent surveillance-broadcast** (ADS-B) information is used when available.

ACDM

To implement collaborative applications that will allow the **sharing of surface operations data among the different stakeholders** on the airport. This will **improve surface traffic management reducing delays on movement and maneuvering areas** and enhance safety, efficiency and situational awareness.

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Airport CDM Implementation Manual

Variable Taxi Time Calculation

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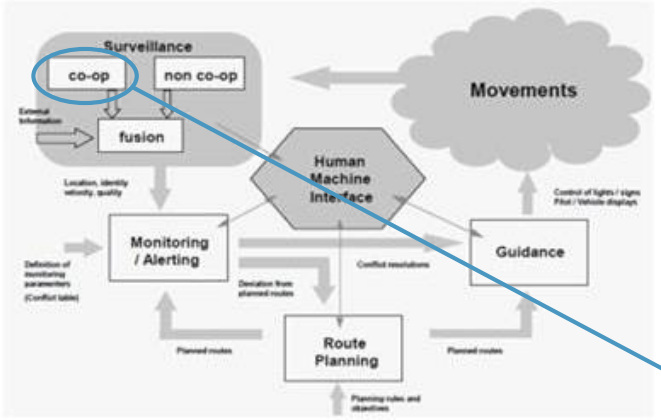
Airport CDM Information Sharing

FASE I - *INFORMATION SHARING*

Visión de SAAB

ICAO 9830 (A-SMGCS)



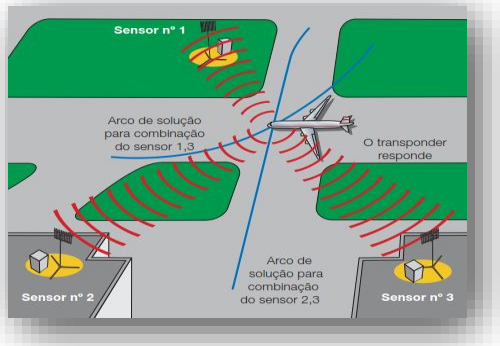
ATC

HMI de los ATCOs en la TWR

Asterix Format

Multilateración

Vigilancia Cooperativa



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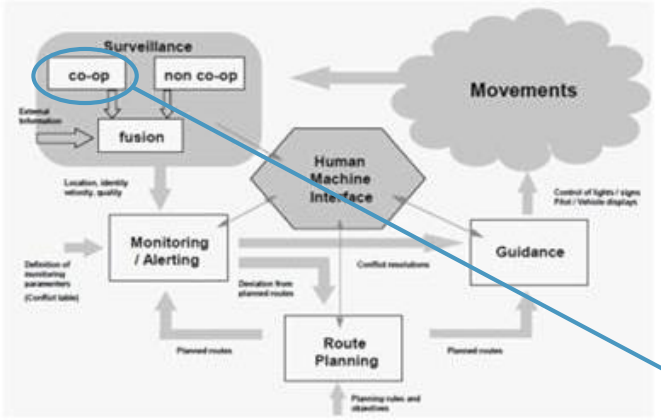
Airport CDM Implementation Manual

- Variable Taxi Time Calculation
- Collaborative Pre-Departure Sequencing
- Milestone Approach
- Airport CDM Information Sharing

FASE I - *INFORMATION SHARING*

Visión de SAAB

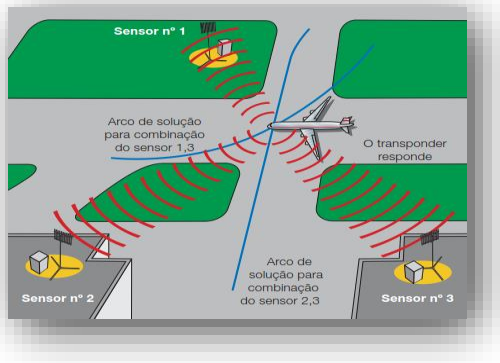
ICAO 9830 (A-SMGCS)



ATC

Multilateración

Vigilancia Cooperativa



Asterix Format

Stakeholders A-CDM

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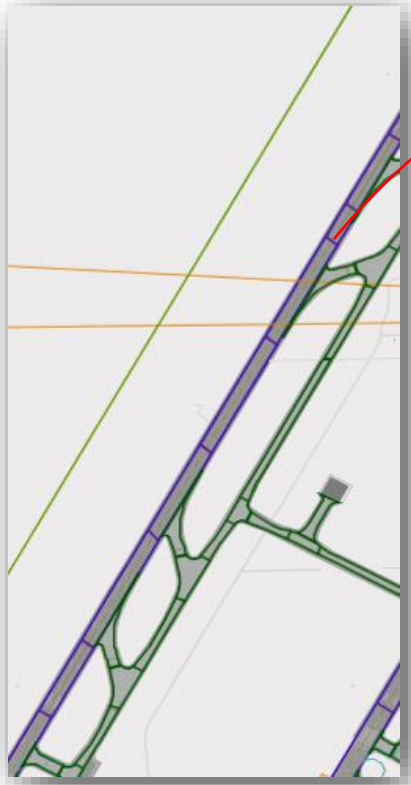
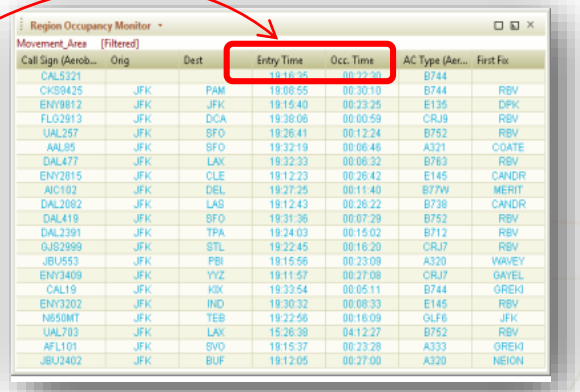
Airport CDM Implementation Manual

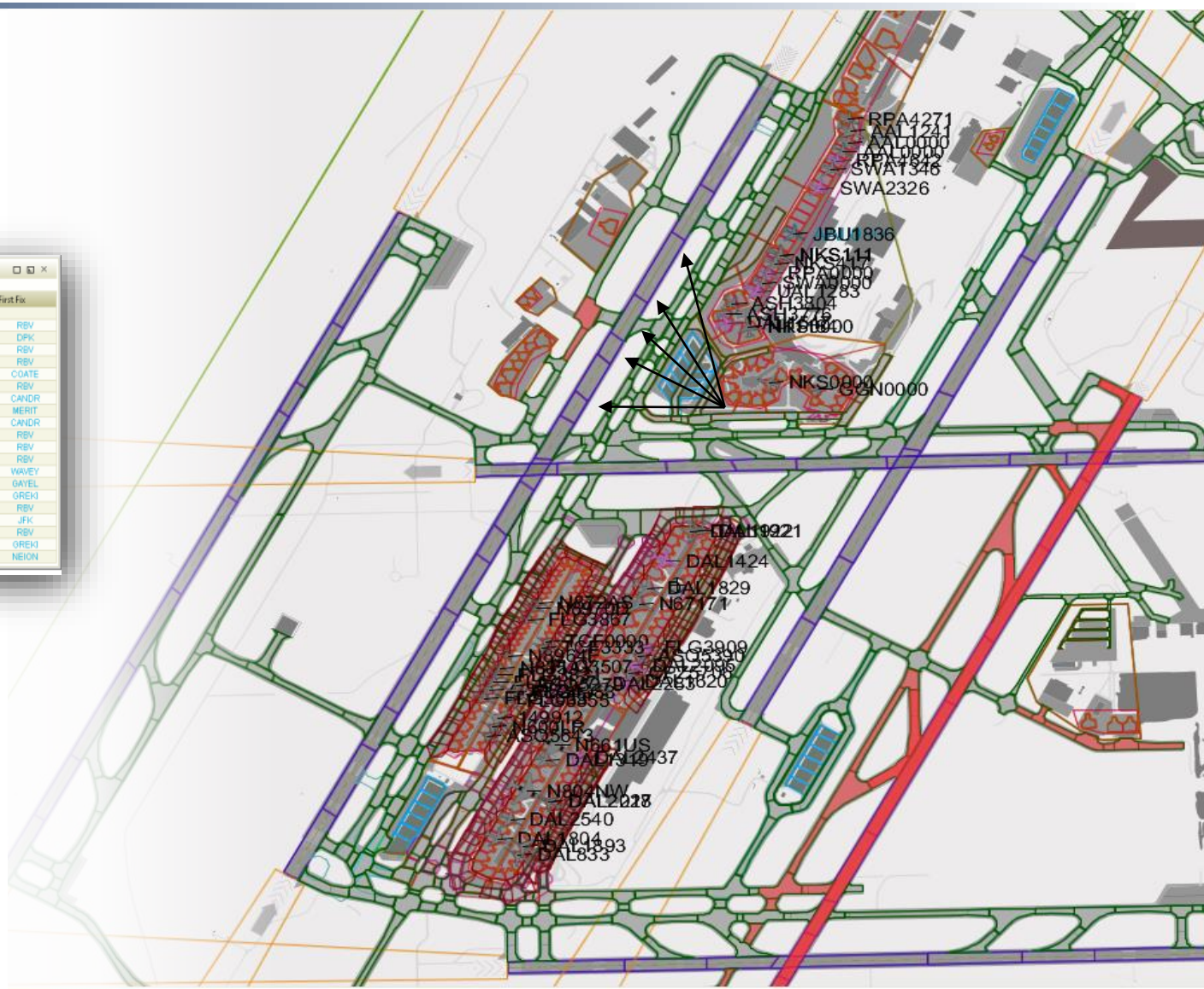
- Variable Taxi Time Calculation
- Collaborative Pre-Departure Sequencing
- Milestone Approach
- Airport CDM Information Sharing

FASE I - *INFORMATION SHARING* (*VIGILANCIA COOPERATIVA*)

- ✓ **Registro automático** de Eventos



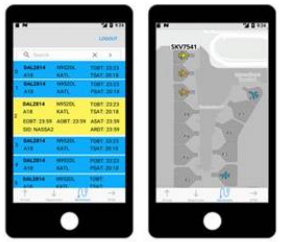


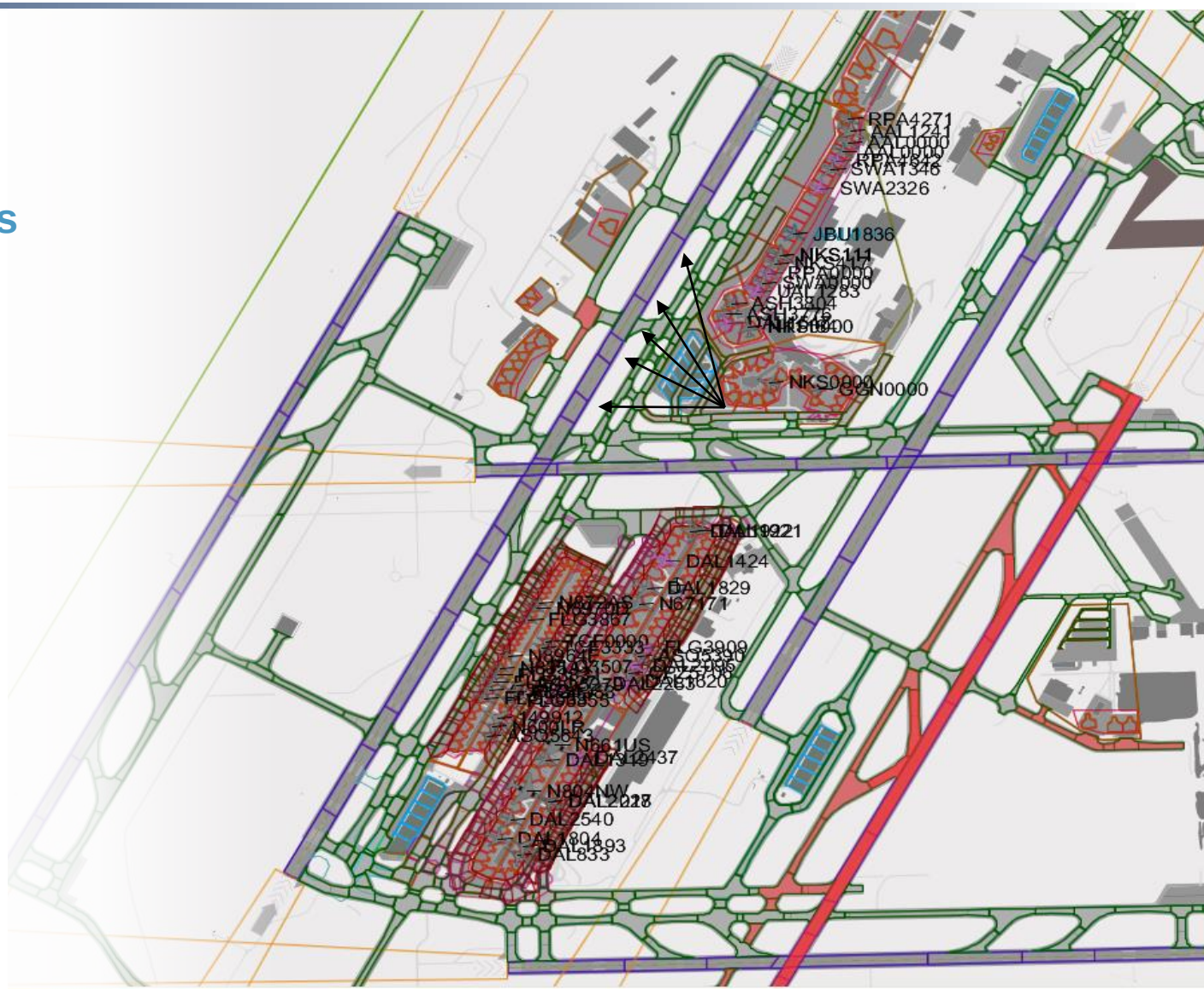


FASE I - *INFORMATION SHARING* (*VIGILANCIA COOPERATIVA*)

- ✓ **Registro automático** de Eventos
- ✓ Actualización dinámica de **Variable Taxi Times**
- ✓ Cálculo automático de **Targets A-CDM**
- ✓ **Agilidad** y **Previsibilidad**
- ✓ Gestión automática ilimitada de **KPIs**
- ✓ **Grabación** & **Reproducción**

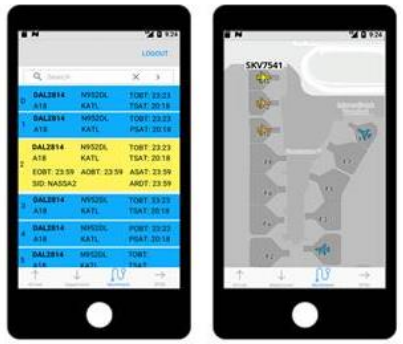
Máxima Consciencia Situacional Común

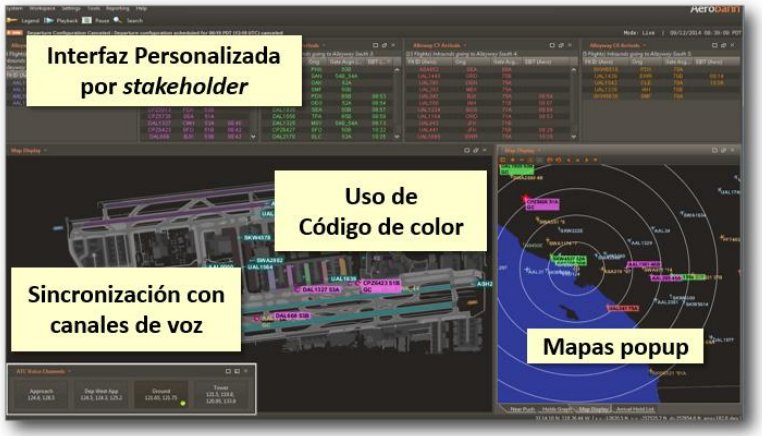




FASE I - *INFORMATION SHARING* (*VIGILANCIA COOPERATIVA*)

Visión de SAAB





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Airport CDM Implementation Manual

Variable Taxi Time Calculation

Collaborative Pre-Departure Sequencing

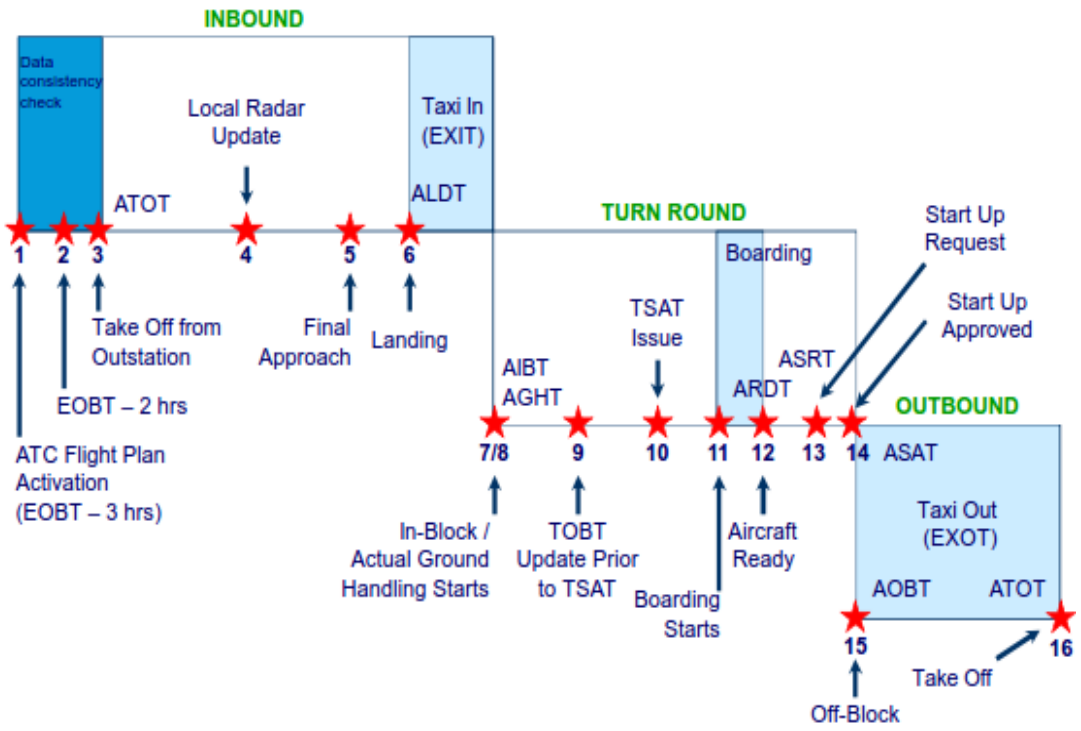
Milestone Approach

Airport CDM Information Sharing

La Vigilancia **Cooperativa** de Superficie es esencial al **aumento de Consciencia Situacional** requerido en el A-CDM

FASE II - *MILESTONE APPROACH*

A-CDM Milestones



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Airport CDM Implementation Manual

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FASE II - *MILESTONE APPROACH*

Oportunidades para que Compañías Aéreas (y *Ground Handlers*) actualicen sus **Targets**

Línea de Tiempo

EOBT - 3 h ★ | EOBT - 2 h ★ | Takeoff from Outstation ★ | Radar Update ★ | Final Approach ★ | Landing ★ | In-Block ★ | Ground Handling Start ★ | **TOBT** ★ | **TTOT** ★

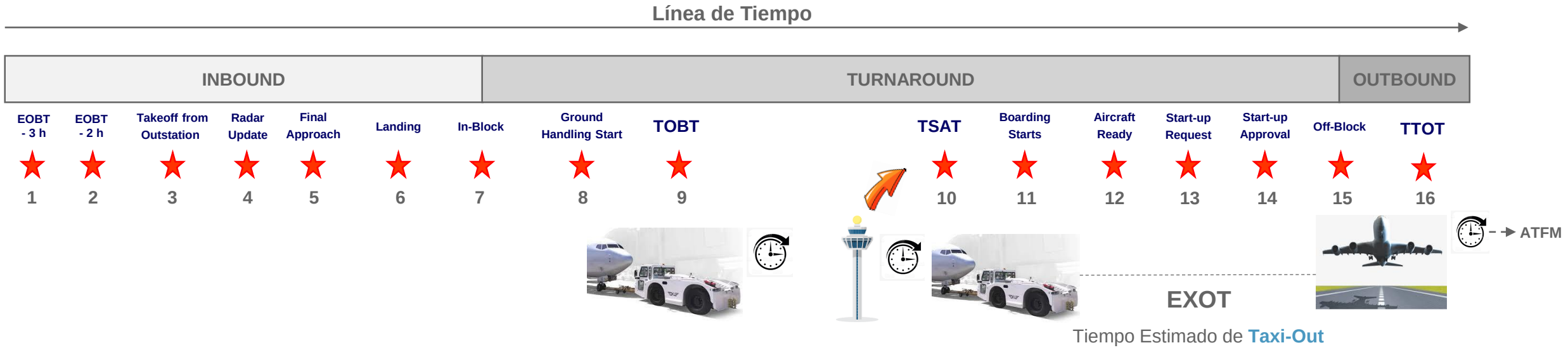
EXOT

Tiempo Estimado de **Taxi-Out**

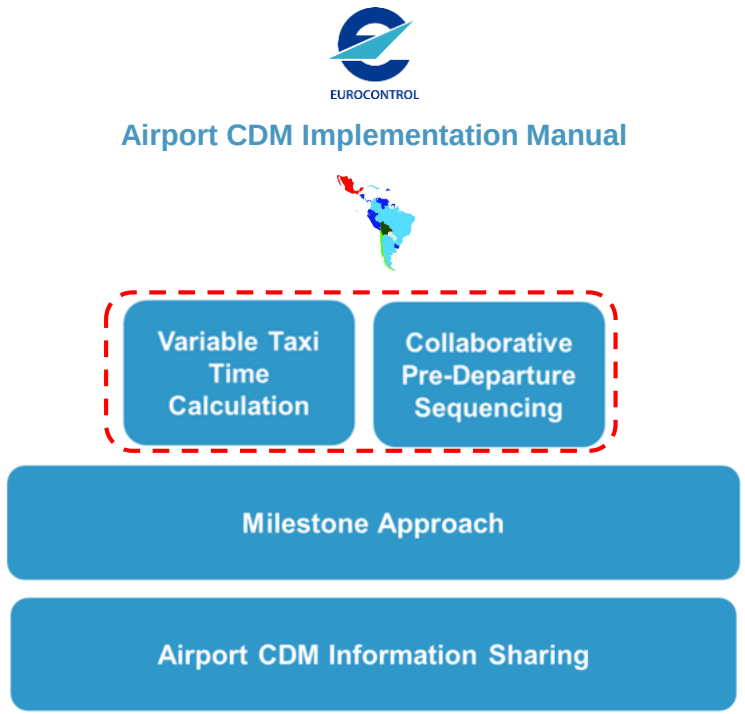
→ ATFM

FASE II - *MILESTONE APPROACH*

Oportunidades para que Compañías Aéreas (y *Ground Handlers*) actualicen sus **Targets**



FASE III - *VARIABLE TAXI TIME / ASIGNACIÓN DE TSAT*



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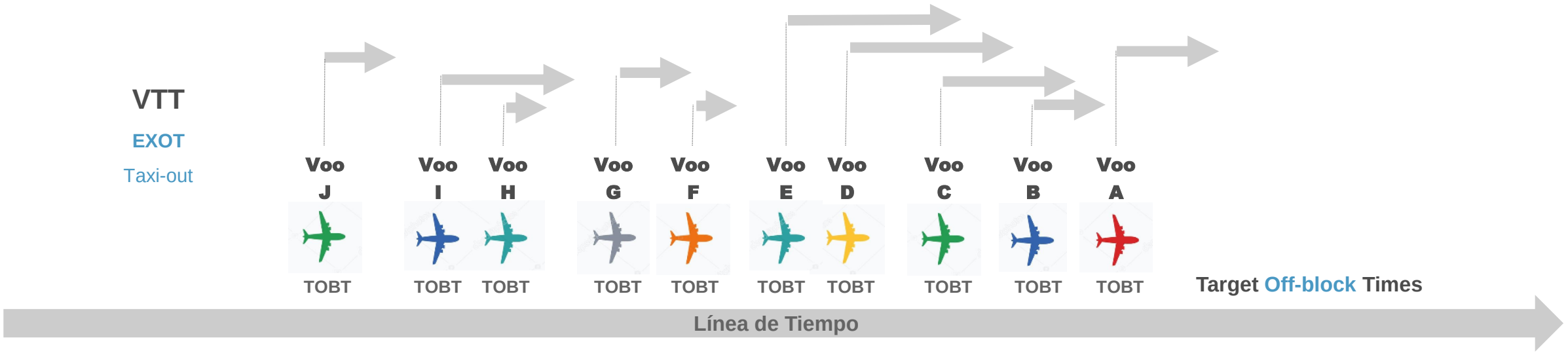
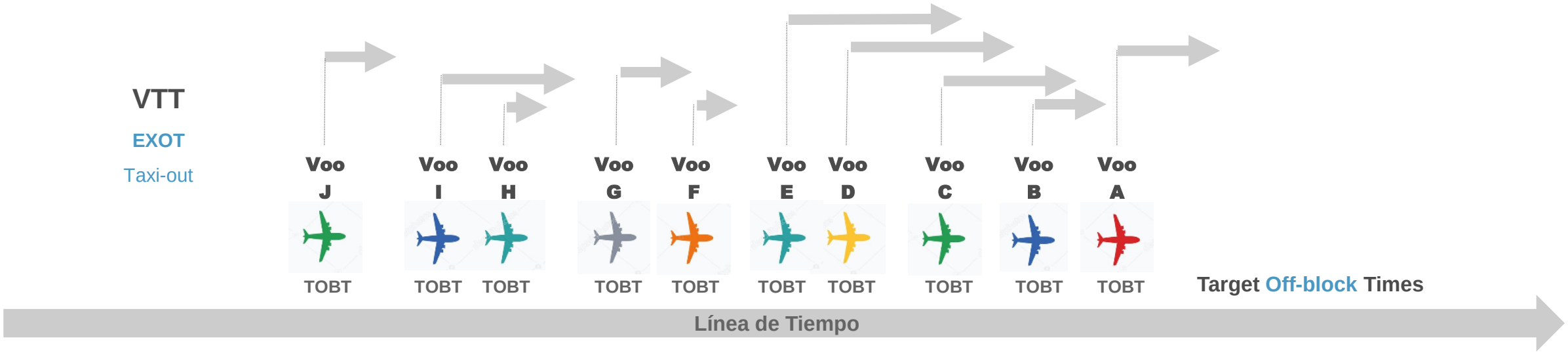
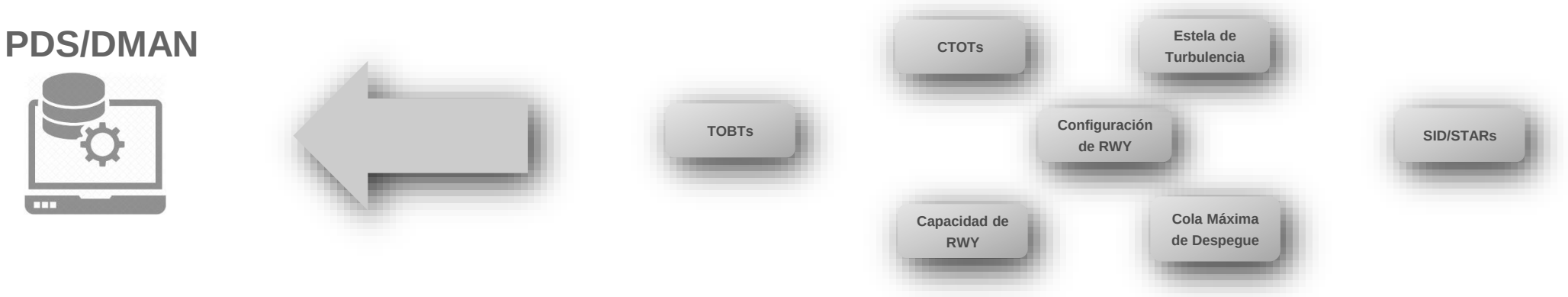


FASE III - *VARIABLE TAXI TIME / ASIGNACIÓN DE TSAT*





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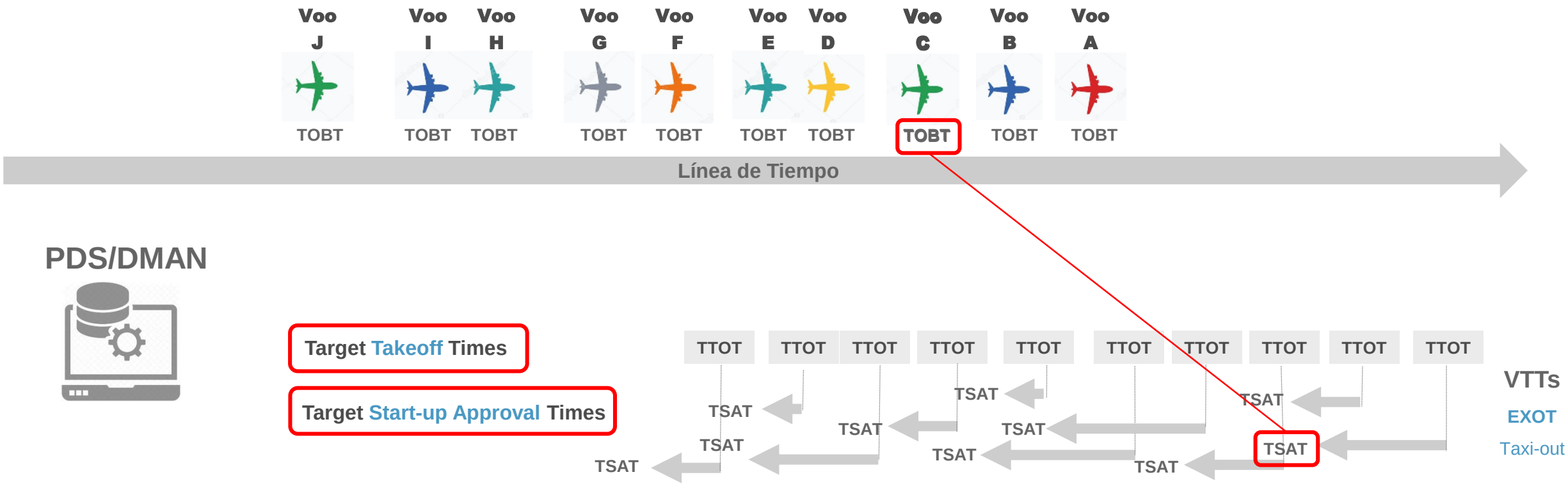
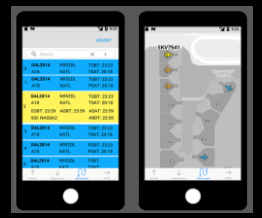


FASE III - *VARIABLE TAXI TIME / ASIGNACIÓN DE TSAT*

Sin **MÁXIMA PRECISIÓN de TOBTs / VTTs**

no existe A-CDM !

- ✓ **ACISP inteligente**
- ✓ **(*Saab*) Vigilancia Cooperativa**



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Airport CDM Implementation Manual

Variable Taxi Time Calculation

Collaborative Pre-Departure Sequencing

Milestone Approach

Airport CDM Information Sharing

A-CDM, DESAFÍOS REGIONALES

No existe en Latinoamérica un **Servicio Global de Gestión de Flujo**, capaz de **integrarse a Aeropuertos A-CDM** en la región.

Contratos de concesión de aeropuertos no establecen compromiso de inversión en un ACISP !

Stakeholders A-CDM no han heredado de los Proveedores ATC, **acceso a sistemas de Vigilancia Cooperativa** de Plataformas *A-SMGCS*

A-CDM, DESAFÍOS REGIONALES

- ✓ **ICAO**

  Surface operations, especially for the turnaround phase, involve all operational stakeholders at an airport. By relying on separated systems and not sharing all relevant information, they currently do not perform as efficiently as they could.

- ✓ **IATA**

  There is no one size fits all solution for A-CDM, and **each implementation must be based on careful engagement across all airport stakeholders**, but primarily the airport, the airlines using the airport, handling agents and the air traffic service provider.

- ✓ **CANSO**

  A-CDM is a process based on improved real-time information sharing between all stakeholders, i.e. airport operators, aircraft operators, ground handlers and air traffic control unit, allowing better decision-making and more efficient handling of an aircraft while on the ground.

- ✓ **ACI**

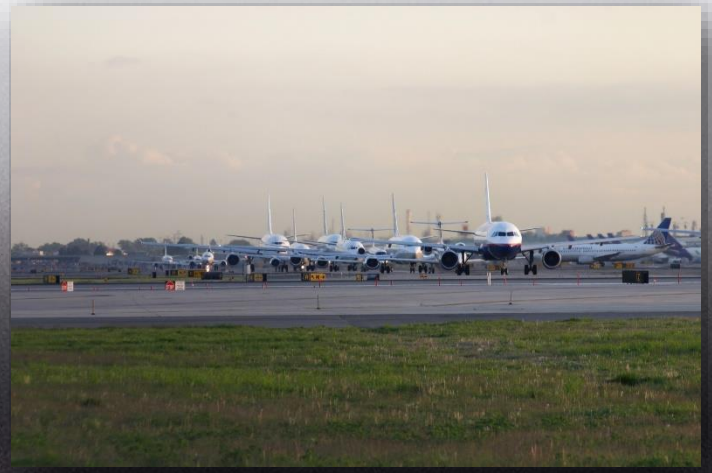
  Airport Collaborative Decision Making (A-CDM) analyses **the importance of the relationships between airport operators, airlines, ground handlers and air traffic controllers working together** to improve decision making, thereby reducing delays and enhancing efficiency.

A-CDM, DESAFÍOS REGIONALES

PLAN REGIONAL DE IMPLEMENTACIÓN A-CDM

A-CDM

PERSPECTIVA REGIONAL



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