

Seminario PANS-AIM

Lima, Perú 14-16 Nov 2018

Conjunto de datos digitales.
Conjunto de Datos Digitales
del AIP.

Claves | Preguntas

- ¿Cual es la diferencia entre datos aeronáuticos e información aeronáutica?
- ¿Que es el conjunto de datos aeronáuticos del AIP?
- ¿Cómo puedo intercambiar el conjunto de datos del AIP?

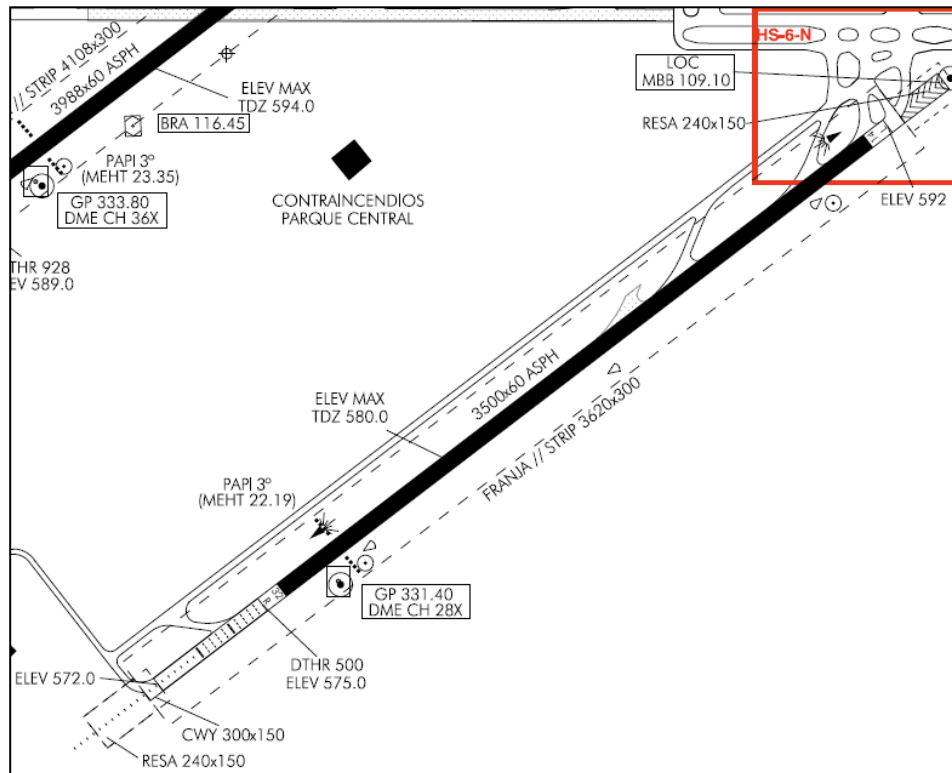
Definición | Datos Aeronáuticos

- Representación de hecho, conceptos o instrucciones aeronáuticas de manera formal y adecuado para la comunicación, interpretación o procesamiento.

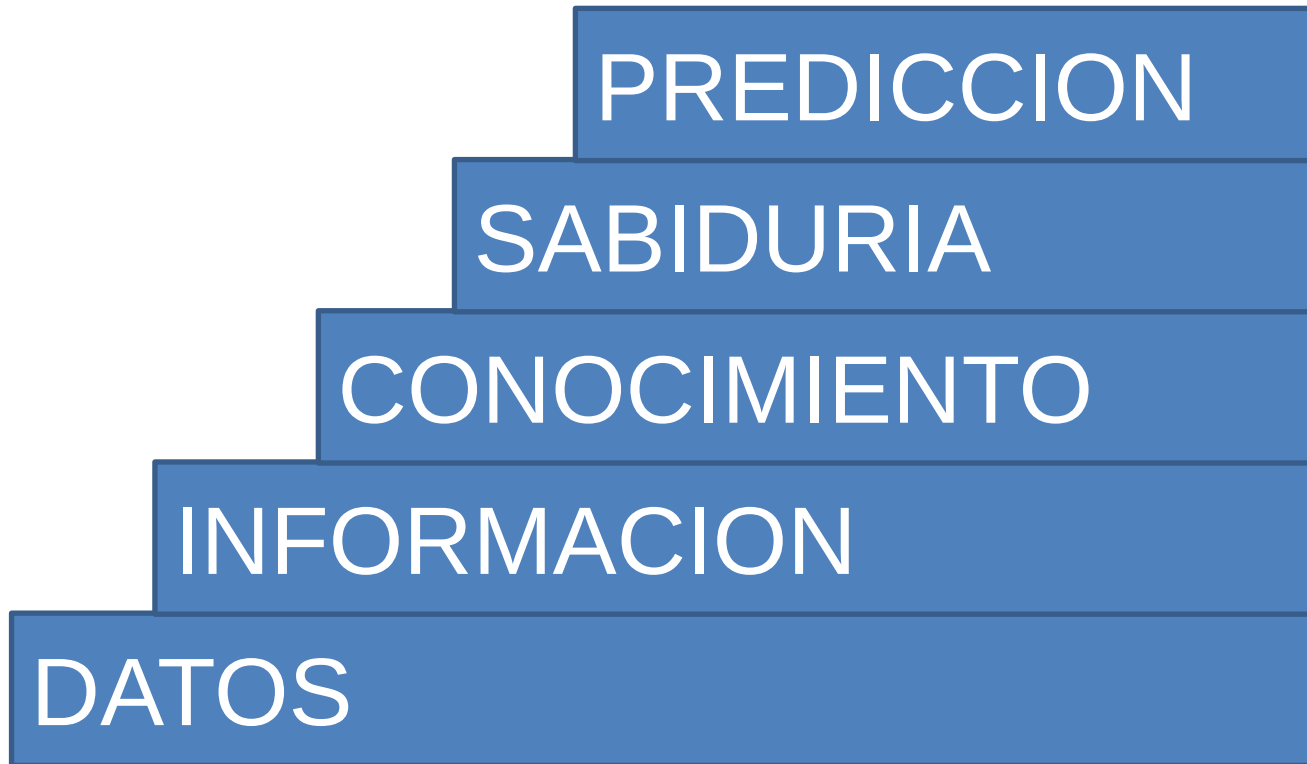
RWY	Orientación Direction	DIM (m)	THR PSN	THR ELEV TDZ ELEV
14L (8) (9)	142.21° GEO 143° MAG	3500 x 60	402941.71N 0033328.33W	THR: 592 m / 1942 ft TDZ: No

Definición | Información Aeronáutica

- Información resultante del ensamblaje, análisis y formateo de datos aeronáuticos.



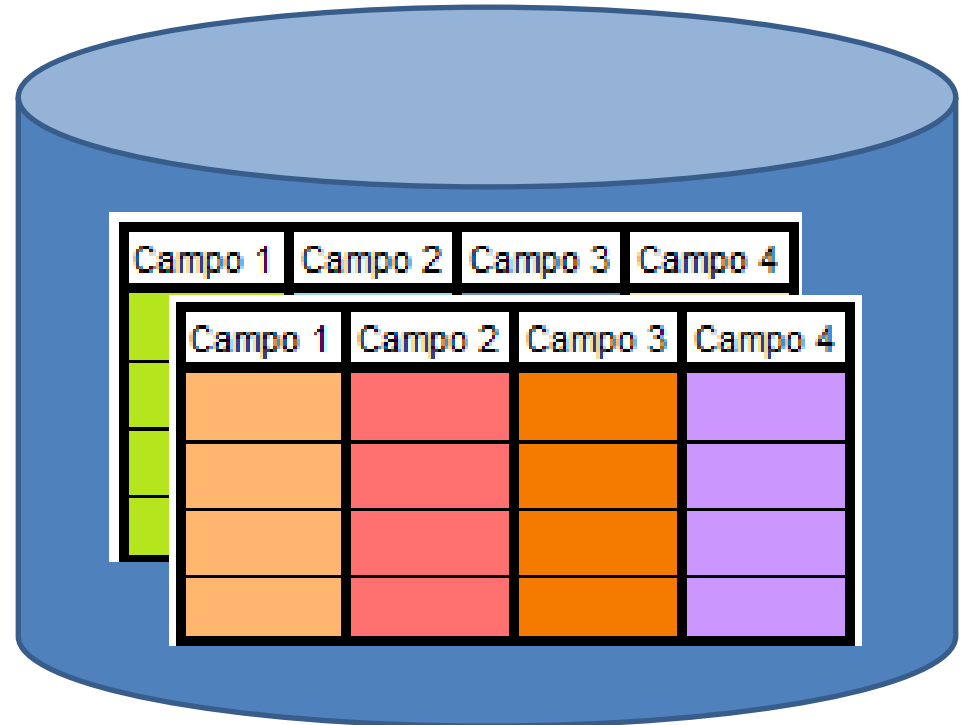
Definición | Ciencia de datos



Definición | Conjunto de datos

- Colección de datos en tablas

RWY	Orientación Direction	DIM (m)	THR PSN	THR ELEV TDZ ELEV
14L (8) (9)	142.21° GEO 143° MAG	3500 x 60	402941.71N 0033328.33W	THR: 592 m / 1942 ft TDZ: No
32R (1) (7)	322.22° GEO 323° MAG	3500 x 60	402824.85N 0033210.30W	THR: 574.8 m / 1886 ft TDZ: 579.9 m / 1903 ft
14R (8) (10)	142.20° GEO 143° MAG	3988 x 60	402905.50N 0033433.64W	THR: 608 m / 1995 ft TDZ: No
32L (2) (7)	322.21° GEO 323° MAG	3988 x 60	402747.10N 0033314.02W	THR: 589.1 m / 1933 ft TDZ: 594.2 m / 1949 ft
18L (3) (7)	179.76° GEO 181° MAG	3500 x 60	403141.22N 0033333.68W	THR: 585.9 m / 1922 ft TDZ: 587.7 m / 1928 ft
36R (8) (11)	359.76° GEO 001° MAG	3500 x 60	403003.97N 0033333.15W	THR: 592 m / 1942 ft TDZ: No
18R (4) (7)	179.76° GEO 181° MAG	4179 x 60	403122.40N 0033429.27W	THR: 606.9 m / 1991 ft TDZ: 606.9 m / 1991 ft
36L (8) (12)	359.76° GEO 001° MAG	4179 x 60	402933.32N 0033428.64W	THR: 605 m / 1985 ft TDZ: No



Definición | datos vs productos



GroupEAD

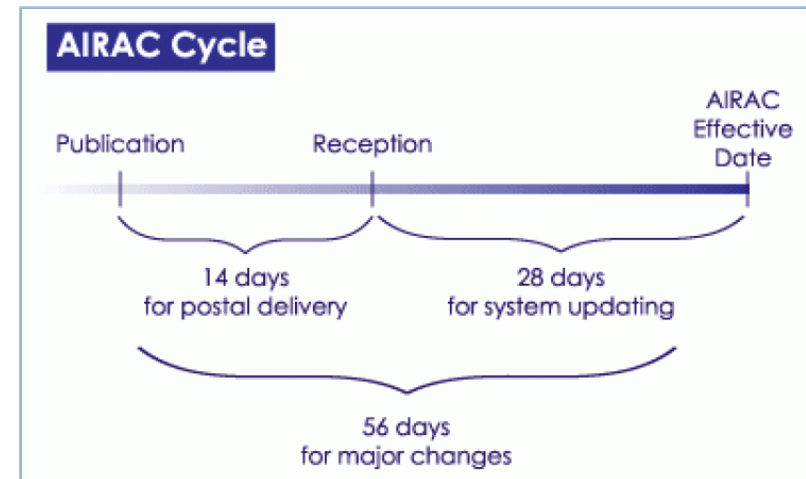
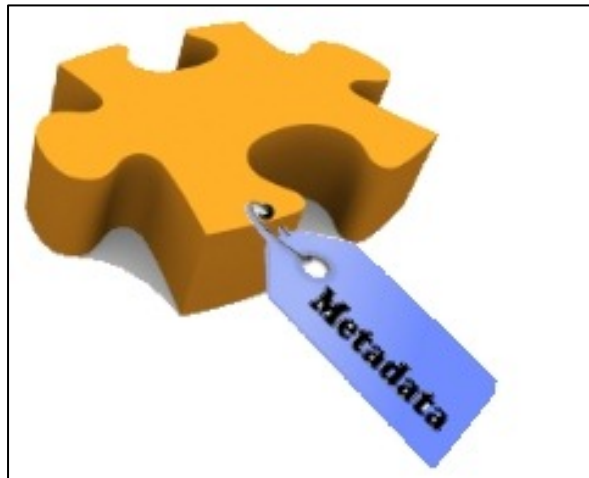
Requisitos | Conjunto de datos

- Uno de los Productos de Información Aeronáutica (antes IAIP)
 - AIP
 - Terreno y obstáculos
 - Mapas de Aeródromo
 - Procedimientos Instrumental de vuelo
- A ser referido por los NOTAM Checklist
- De acuerdo con ISO 19100



Requisitos | Conjunto de datos

- Debe incluir Metadata (ej. Nombre organización, fecha y hora)
- Sujeto al mismo ciclo de actualización que el AIP



Requisitos | Conjunto de datos AIP

- Datos de diferentes secciones del AIP:
 - GEN 2.5, ENR 2.1, ENR 3.1, ENR 3.2, etc
- Las secciones podrían ser omitidas y se hará una referencia al conjunto de datos.

“#AIP-DS#”

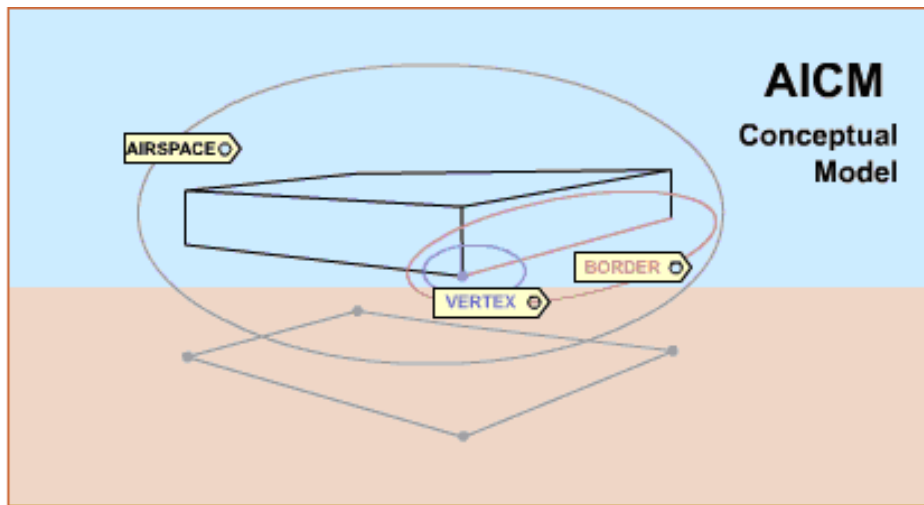
Definición | Catalogo de datos

- Describe detalladamente elementos y propiedades, los requerimientos de calidad y los tipos de datos

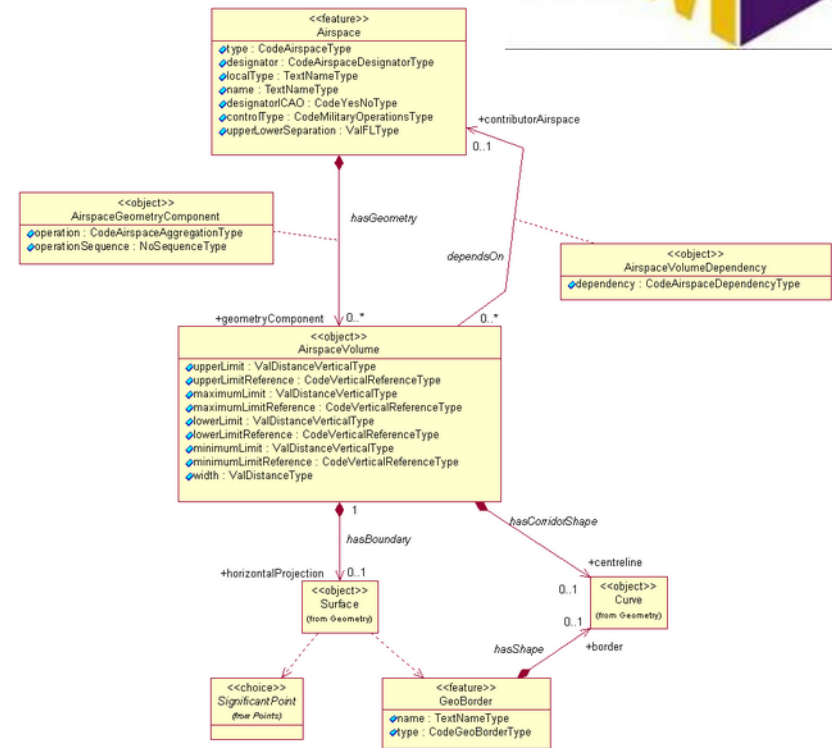
	A	B	C	D	E	F	G	H	I	J	K
1	Table A 1-1 Aerodrome/Heliport data										
2	Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Integrity	Orig Type	Pub. Res.	Chart Res.
3	Runway				A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft. (Annex 14)						
4		Designator		Text	The full textual designator of the runway, used to uniquely identify it at an aerodrome/heliport. E.g. 09/27, 02R/20L, RWY 1.						
5		Nominal length		Distance	The declared longitudinal extent of the runway for operational (performance) calculations.		1 m	critical	surveyed	1 m or 1 ft	1 m
6		Nominal width		Distance	The declared transversal extent of the runway for operational (performance) calculations.		1 m	essential	surveyed	1 m or 1 ft	1 m
7		Geometry		Polygon	Geometries of RunwayElement, RunwayDisplacedArea and RunwayIntersection						
8		Centre line points									
9			Position	Point	The geographical location of runway centre line at each end of the runway, at the stopway and at the origin of each take-off flight path area, and at each significant change in slope of runway and stopway	Definition from Annex 4 3.8.4.2	1 m	critical	surveyed		
10			Elevation	Elevation	The elevation of the corresponding centre line point.		0.25 m	critical	surveyed		
11			Geoid undulation	Height	The geoid undulation at the corresponding centre line point						

Requisitos | Modelo Conceptual

- Basado en UML



“Vocabulario del lenguaje común, los conceptos y sus relaciones”



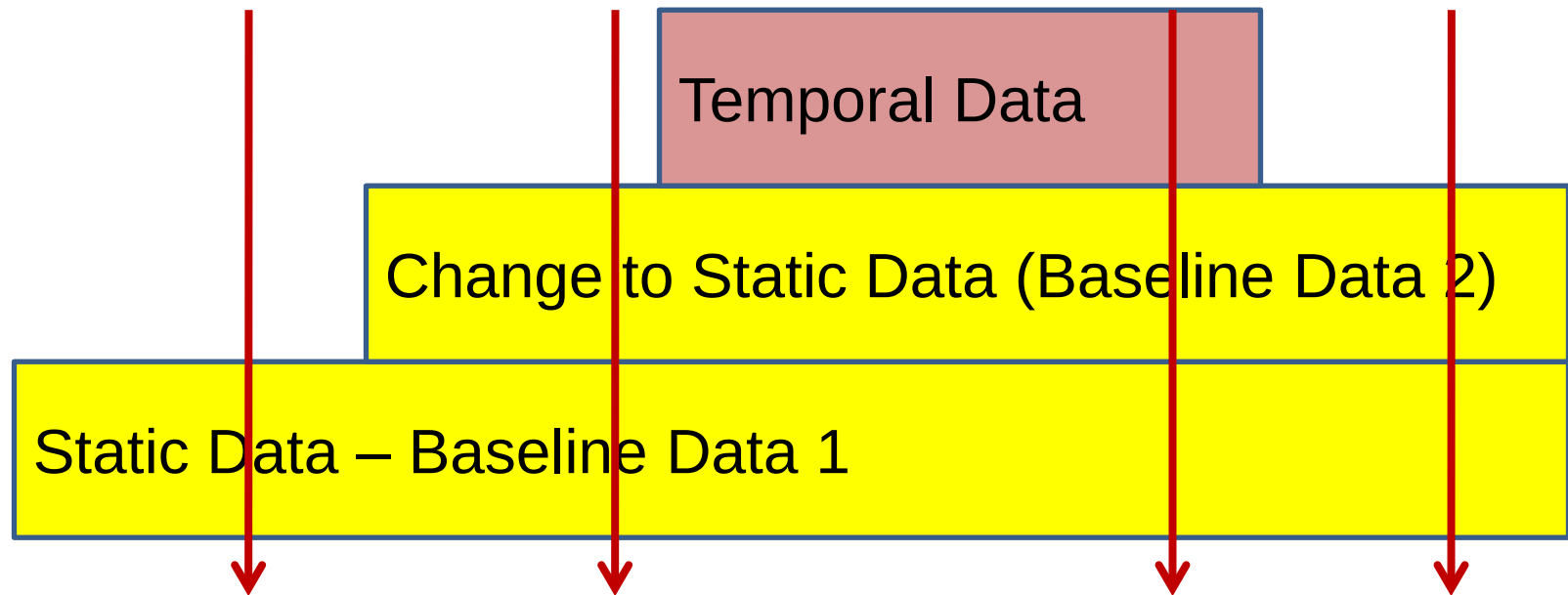
Requisitos | Modelo Conceptual

- Incluir restricciones y reglas de verificación

Name	Data Type	Definition
nilReason	NilReasonEnumeration	
AD	string	Aerodrome only.
AH	string	Aerodrome with heliport landing area.
HP		
LS		
OT		
F		G
Rule textual description		
AirportHeliport		It is prohibited that <u>Runway</u> with assigned <u>type</u> equal-to 'RWY' isSituatesAt <u>AirportHeliport</u> with assigned <u>type</u> equal-to 'HP'

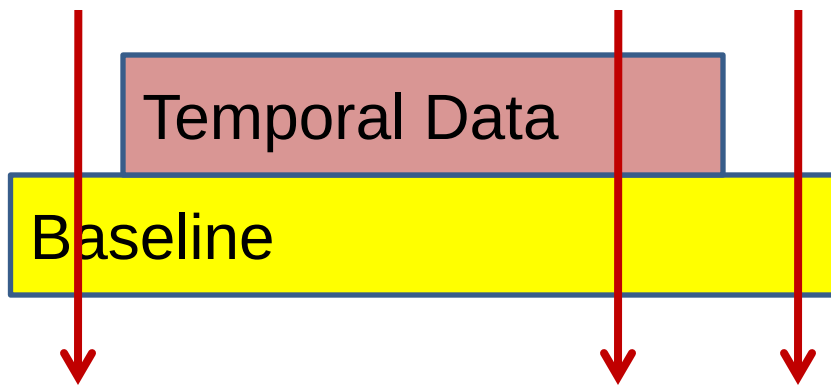
Requisitos | Modelo Conceptual

- Incluir un modelo de temporalidad



Requisitos | Modelo Conceptual

- Incluir un modelo de temporalidad

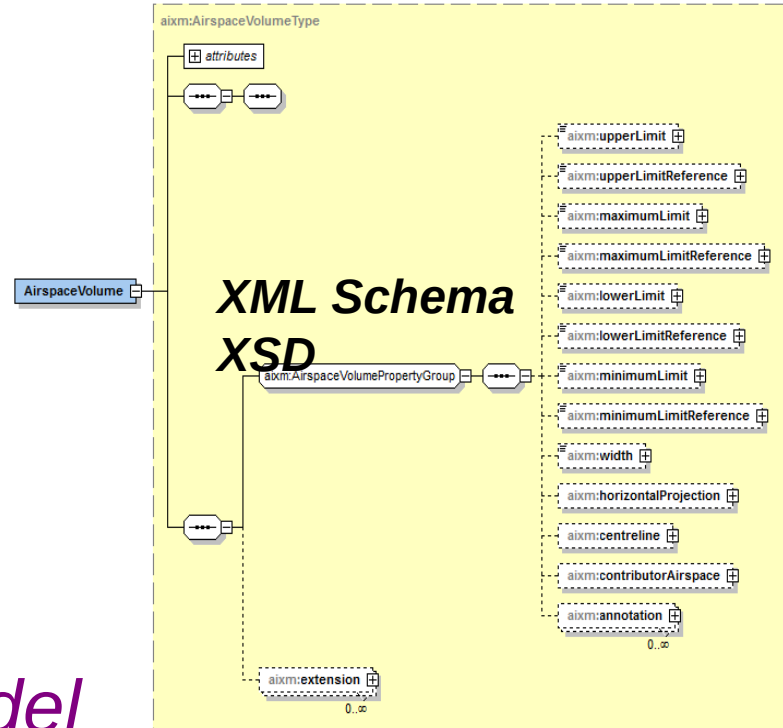


Requisitos | Modelo Intercambio

- Utilizar un formato común de codificación (ej. XML, GML, JSON)

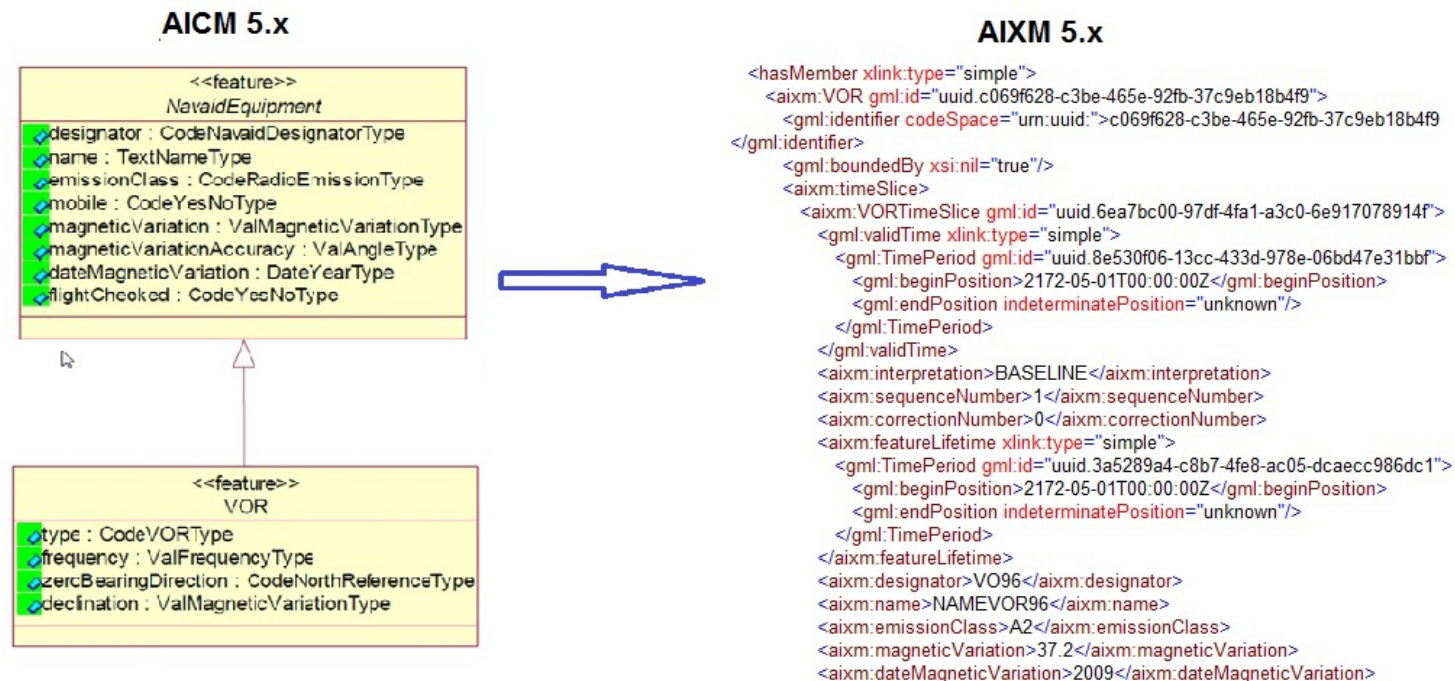
```
<aixm:type>CTA</aixm:type>
<aixm:designator>EADD</aixm:designator>
<aixm:name>CTA DONLON</aixm:name>
<aixm:geometryComponent>
  <aixm:AirspaceGeometryComponent gml:id="AV001">
    <aixm:operation>BASE</aixm:operation>
    <aixm:operationSequence>1</aixm:operationSequence>
    <aixm:theAirspaceVolume>
      <aixm:AirspaceVolume gml:id="V001">
        <aixm:upperLimit uom="FL">245</aixm:upperLimit>
        <aixm:upperLimitReference>STD</aixm:upperLimitReference>
        <aixm:lowerLimit uom="FL">30</aixm:lowerLimit>
        <aixm:lowerLimitReference>STD</aixm:lowerLimitReference>
        <aixm:horizontalProjection>
          <aixm:Surface gml:id="S001">
```

“Formato y gramática del lenguaje común”



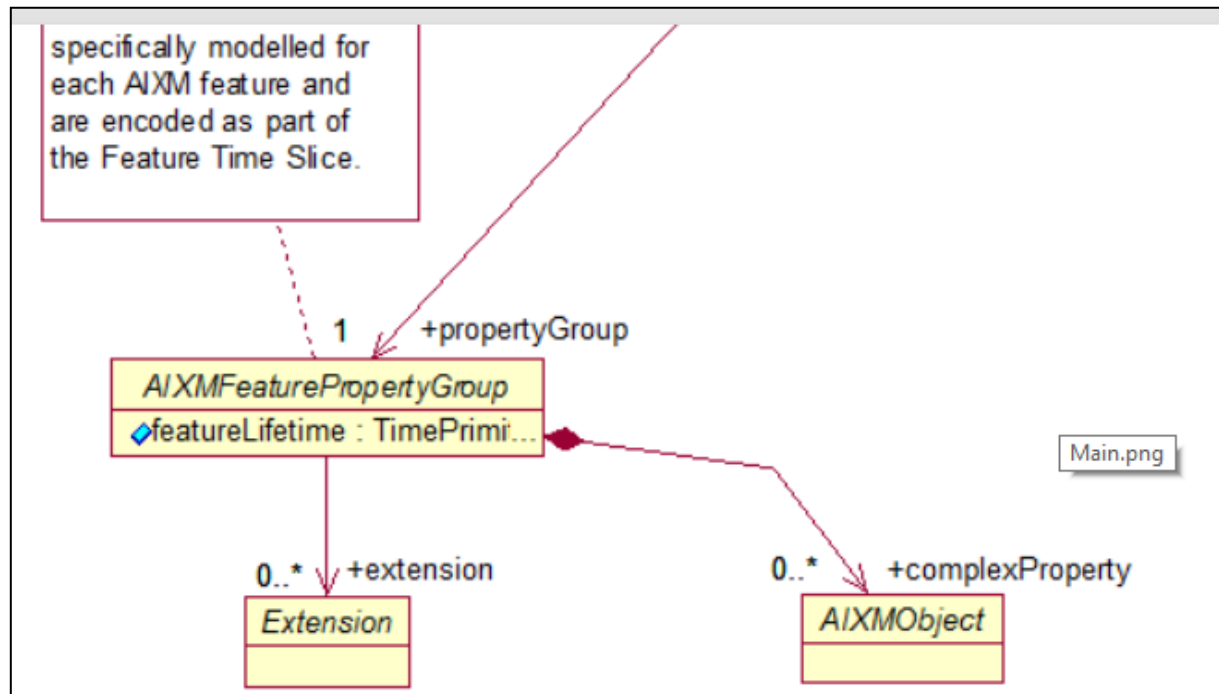
Requisitos | Modelo Intercambio

- Cubrir todas las elementos, atributos y relaciones del modelo conceptual

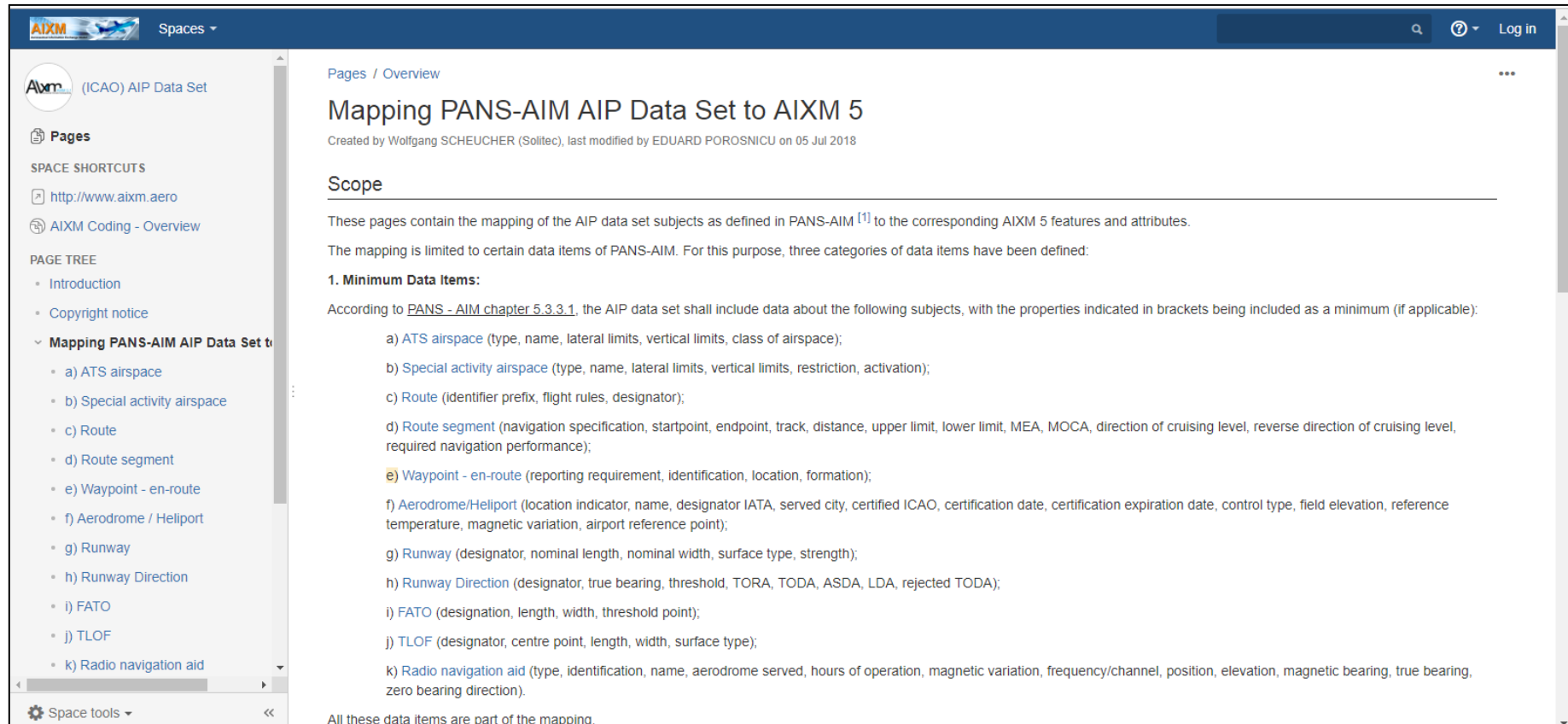


Requisitos | Modelo Intercambio

- Proveer un mecanismo de extensión



Modelo | Catalogo de datos y AIXM



AIXM (ICAO) AIP Data Set

Spaces ▾

Pages

SPACE SHORTCUTS

- <http://www.aixm.aero>
- [AIXM Coding - Overview](#)

PAGE TREE

- [Introduction](#)
- [Copyright notice](#)
- Mapping PANS-AIM AIP Data Set to AIXM 5**
 - [a\) ATS airspace](#)
 - [b\) Special activity airspace](#)
 - [c\) Route](#)
 - [d\) Route segment](#)
 - [e\) Waypoint - en-route](#)
 - [f\) Aerodrome / Heliport](#)
 - [g\) Runway](#)
 - [h\) Runway Direction](#)
 - [i\) FATO](#)
 - [j\) TLOF](#)
 - [k\) Radio navigation aid](#)

Space tools ▾

Pages / Overview

Mapping PANS-AIM AIP Data Set to AIXM 5

Created by Wolfgang SCHEUCHER (Solitec), last modified by EDUARD POROSNICU on 05 Jul 2018

Scope

These pages contain the mapping of the AIP data set subjects as defined in PANS-AIM ^[1] to the corresponding AIXM 5 features and attributes.

The mapping is limited to certain data items of PANS-AIM. For this purpose, three categories of data items have been defined:

1. Minimum Data Items:

According to [PANS - AIM chapter 5.3.3.1](#), the AIP data set shall include data about the following subjects, with the properties indicated in brackets being included as a minimum (if applicable):

- a) [ATS airspace](#) (type, name, lateral limits, vertical limits, class of airspace);
- b) [Special activity airspace](#) (type, name, lateral limits, vertical limits, restriction, activation);
- c) [Route](#) (Identifier prefix, flight rules, designator);
- d) [Route segment](#) (navigation specification, startpoint, endpoint, track, distance, upper limit, lower limit, MEA, MOCA, direction of cruising level, reverse direction of cruising level, required navigation performance);
- e) [Waypoint - en-route](#) (reporting requirement, identification, location, formation);
- f) [Aerodrome/Heliport](#) (location indicator, name, designator IATA, served city, certified ICAO, certification date, certification expiration date, control type, field elevation, reference temperature, magnetic variation, airport reference point);
- g) [Runway](#) (designator, nominal length, nominal width, surface type, strength);
- h) [Runway Direction](#) (designator, true bearing, threshold, TORA, TODA, ASDA, LDA, rejected TODA);
- i) [FATO](#) (designation, length, width, threshold point);
- j) [TLOF](#) (designator, centre point, length, width, surface type);
- k) [Radio navigation aid](#) (type, identification, name, aerodrome served, hours of operation, magnetic variation, frequency/channel, position, elevation, magnetic bearing, true bearing, zero bearing direction).

All these data items are part of the mapping.



¡Gracias!

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