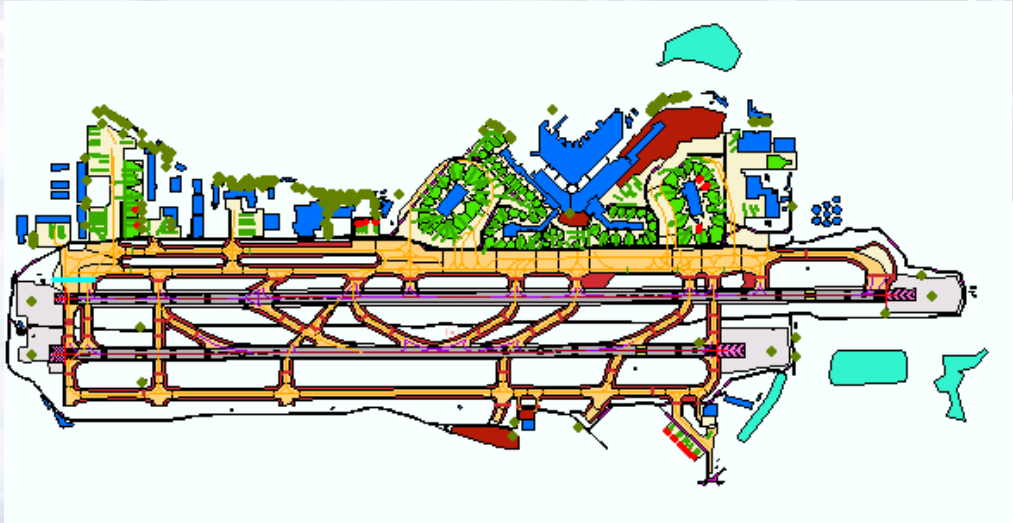
World-Wide Precision Airport Mapping Databases (AMDB) for Aviation Applications



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Marc Launer, Diana Baca,
Jeppesen

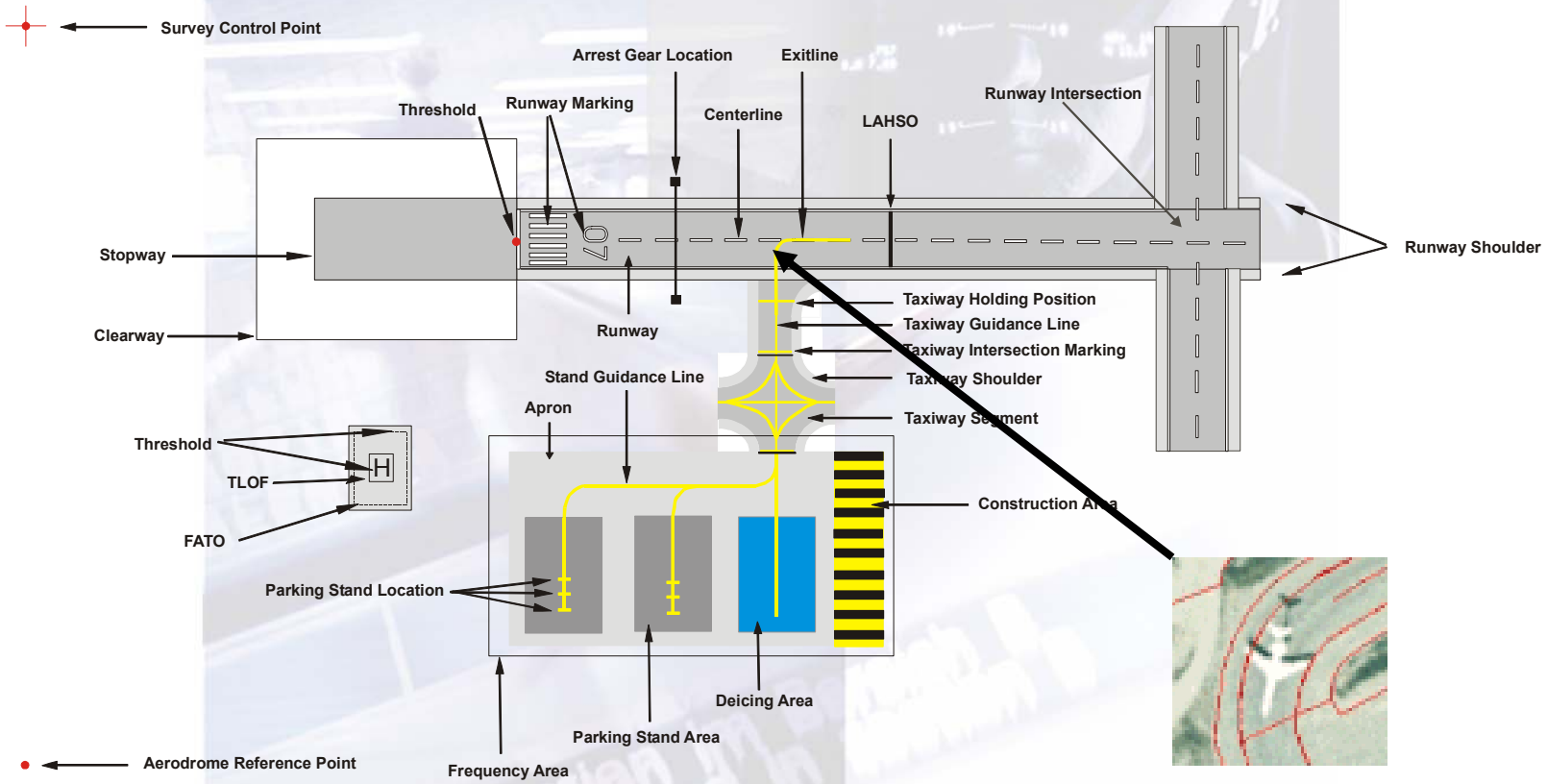
JEPPESEN

Table of Content

- AMDB content
- AMDB coverage
- AMDB quality
- AMDB generation process

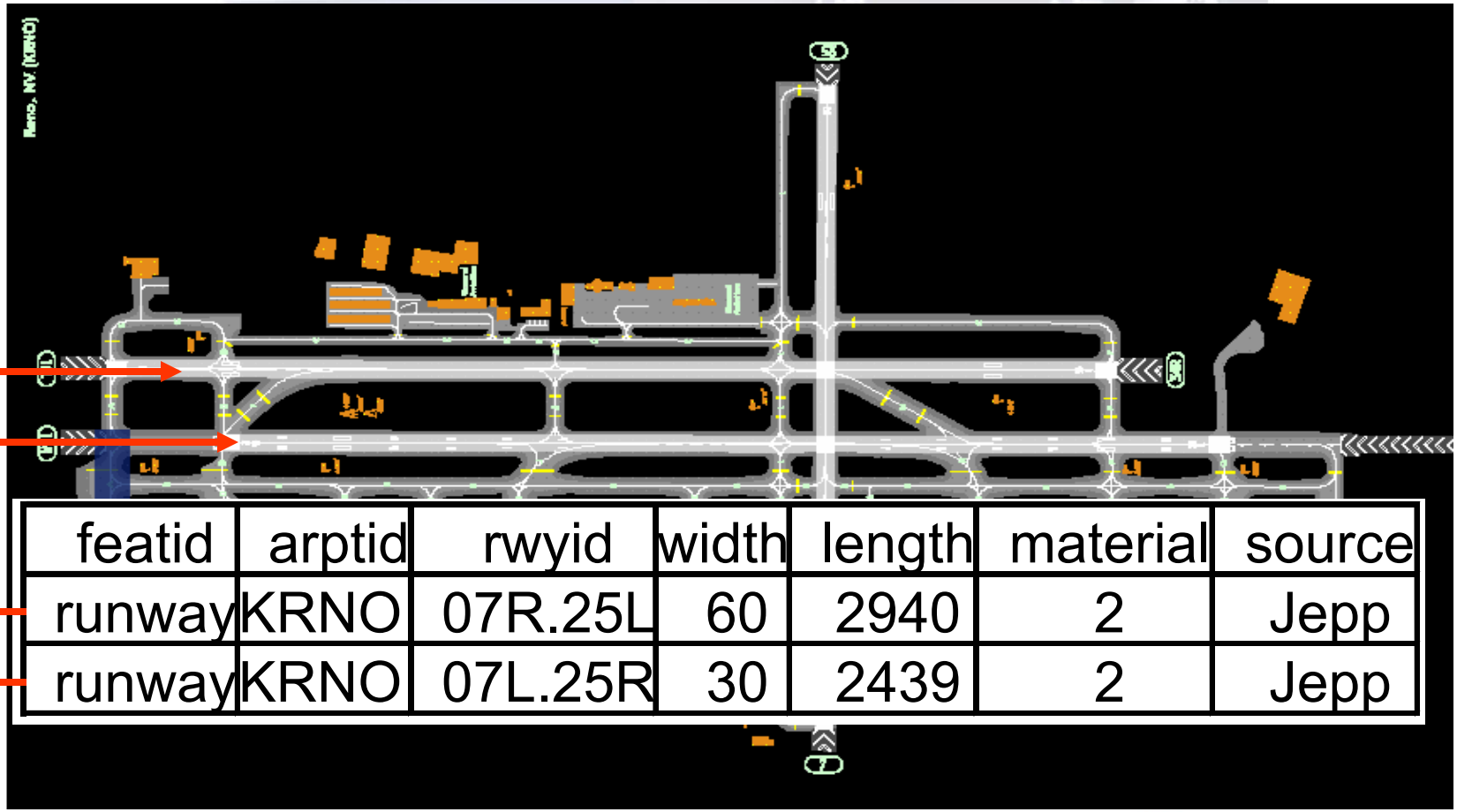
AMDB content - Features

- ED-99 / DO-272 compliant



AMDB content - Attributes

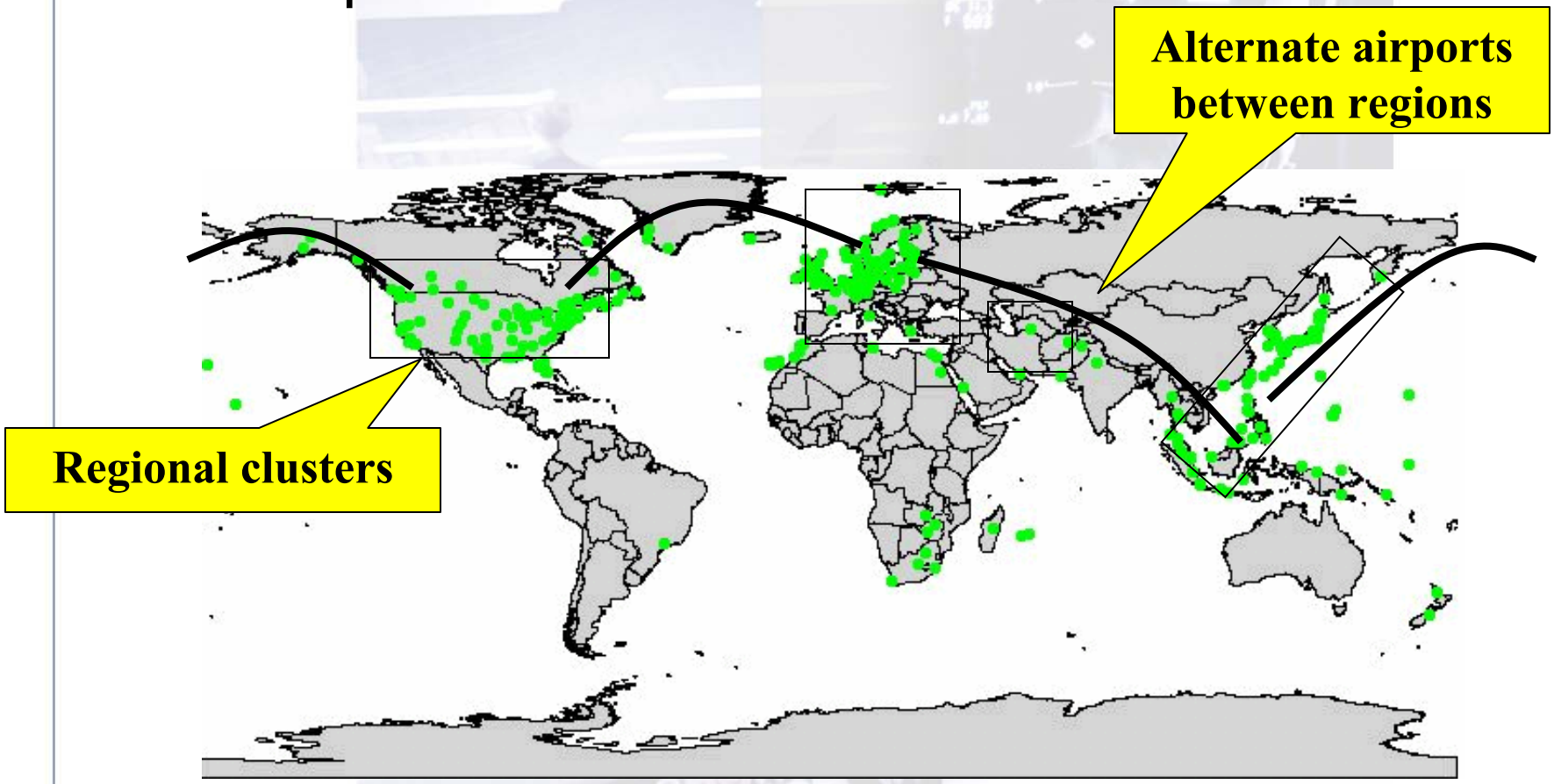
- ED-99 / DO-272 compliant



featid	arptid	rwyid	width	length	material	source
runway	KRNO	07R.25L	60	2940	2	Jepp
runway	KRNO	07L.25R	30	2439	2	Jepp

AMDB coverage - World-Wide

- 300 airports world-wide



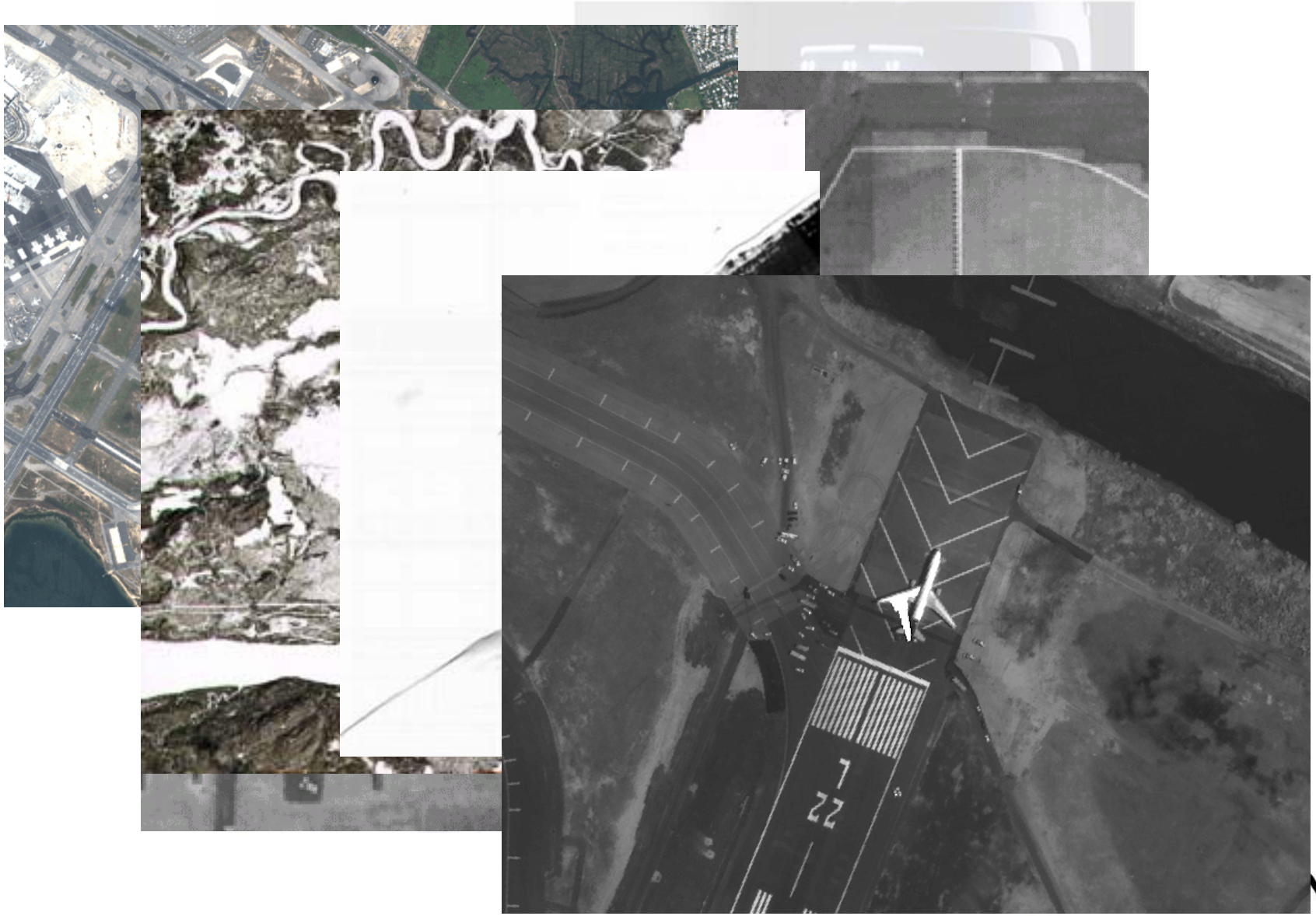
AMDB quality – ED-9

Usable for situation awareness functions

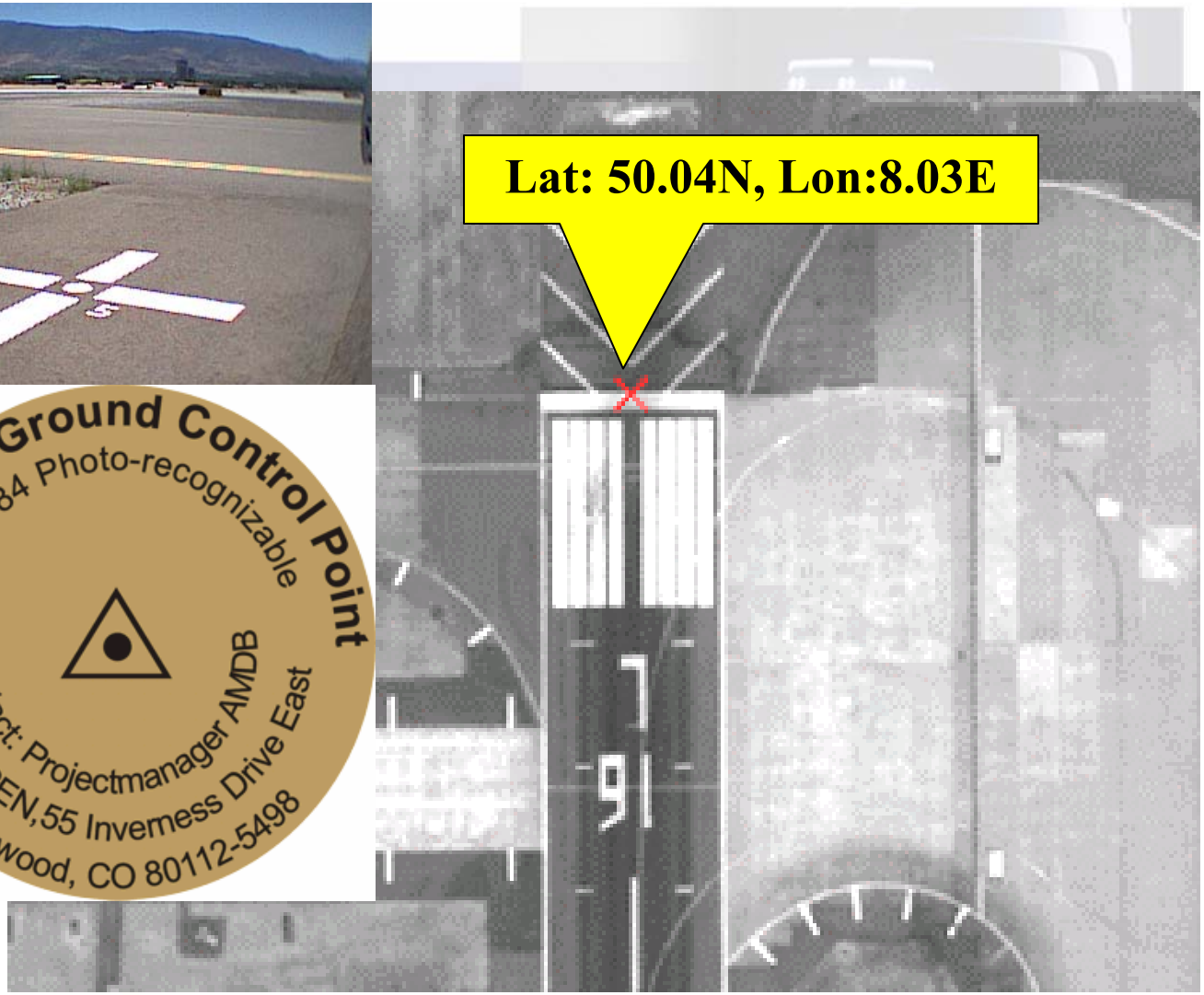
- ED-99 (DO-272), medium quality (5m, CE90)
- ED-76 (DO-200A)
- integrity
  (routine for geometry: 10^{-3} by back-validation of final data)
- traceability: is ensured by DO-272 compliance
  (attribute to each feature)
- timeliness: regular updates
  (triggered by essential changes on the airport)
- completeness: is assured
  (repeated generation and visual validation of feature)

Exceed DO-272 requirements

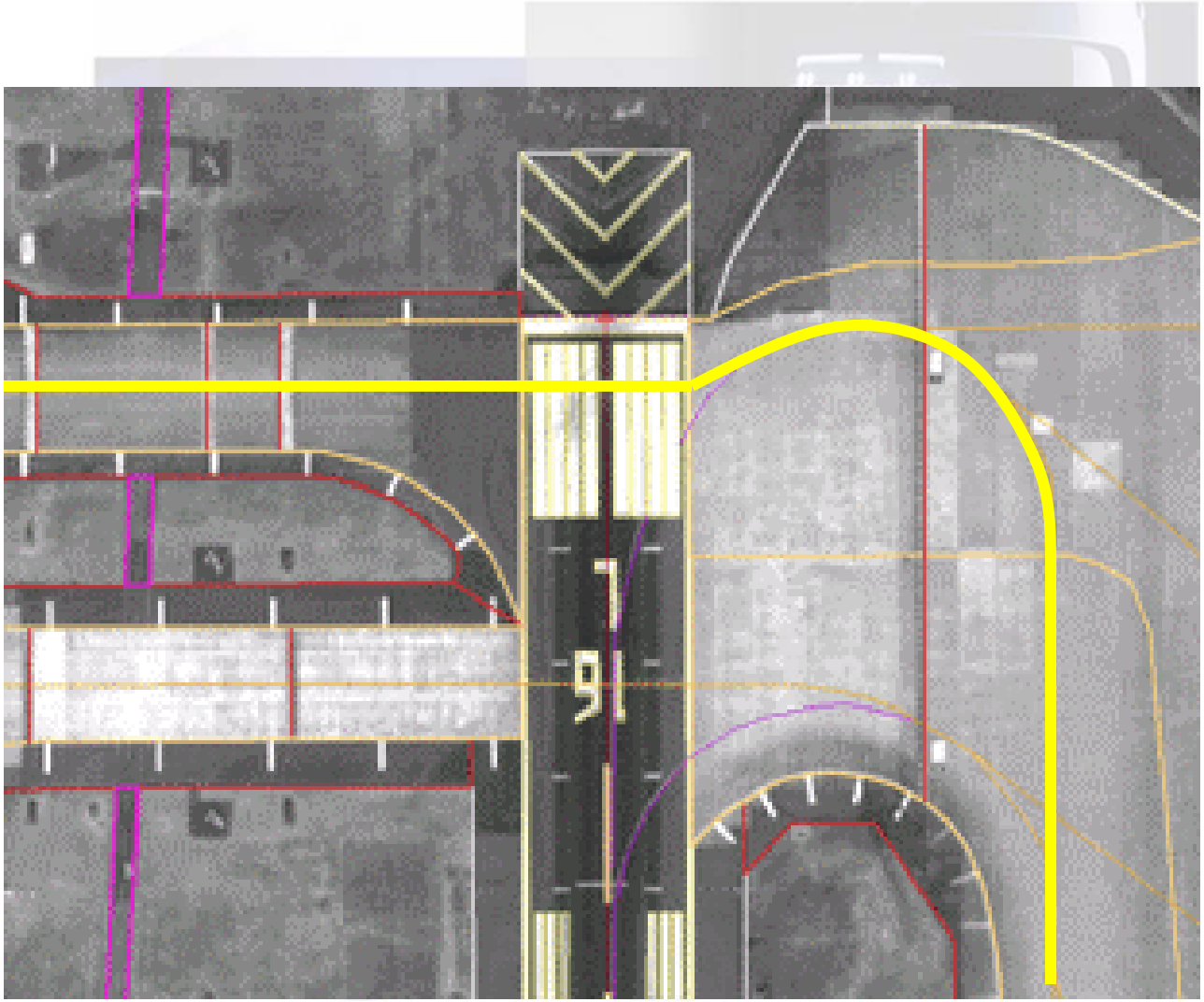
AMDB process – Remote Sensing



AMDB process – Establish Ground Control

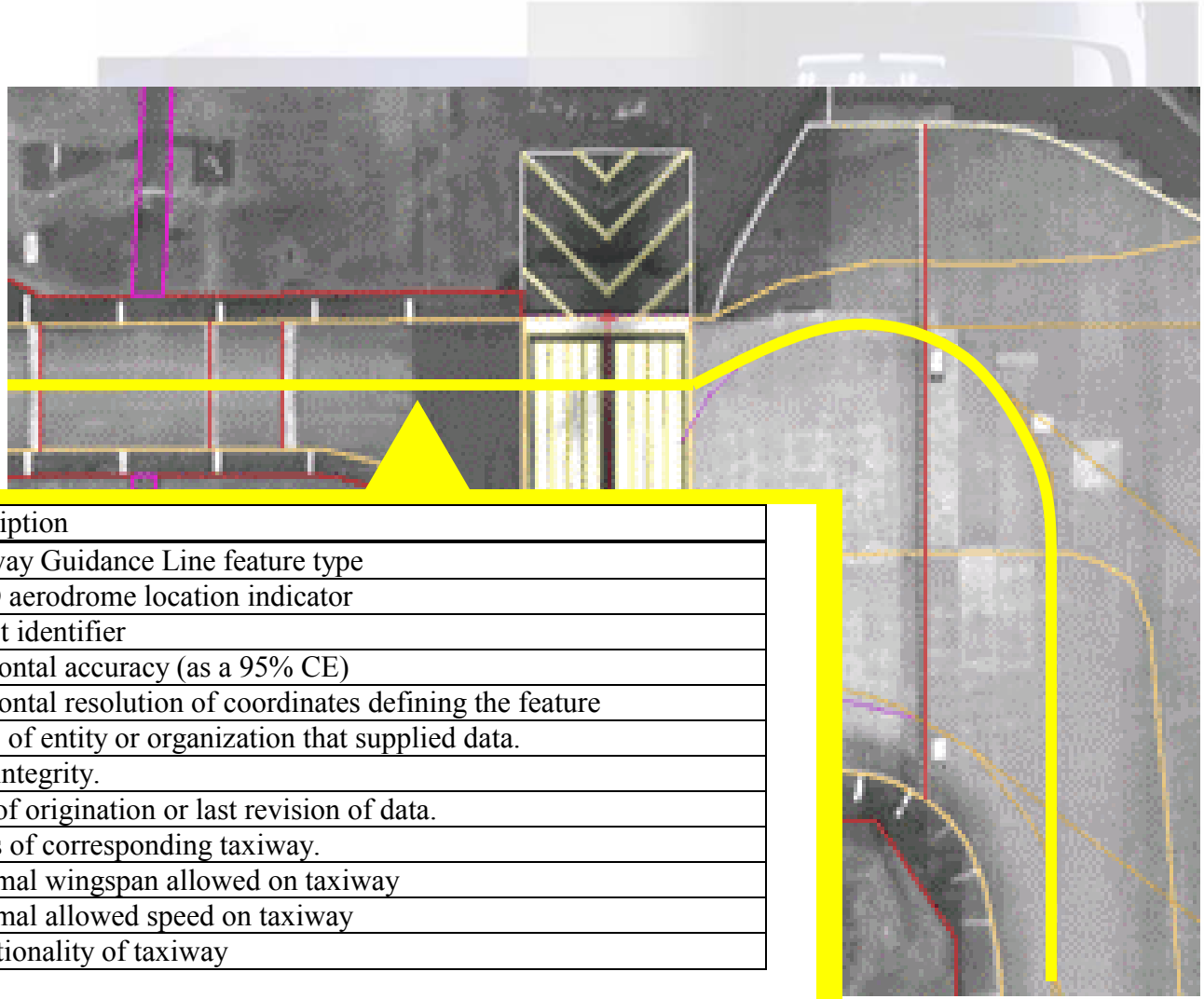


AMDB process – Vector Extraction



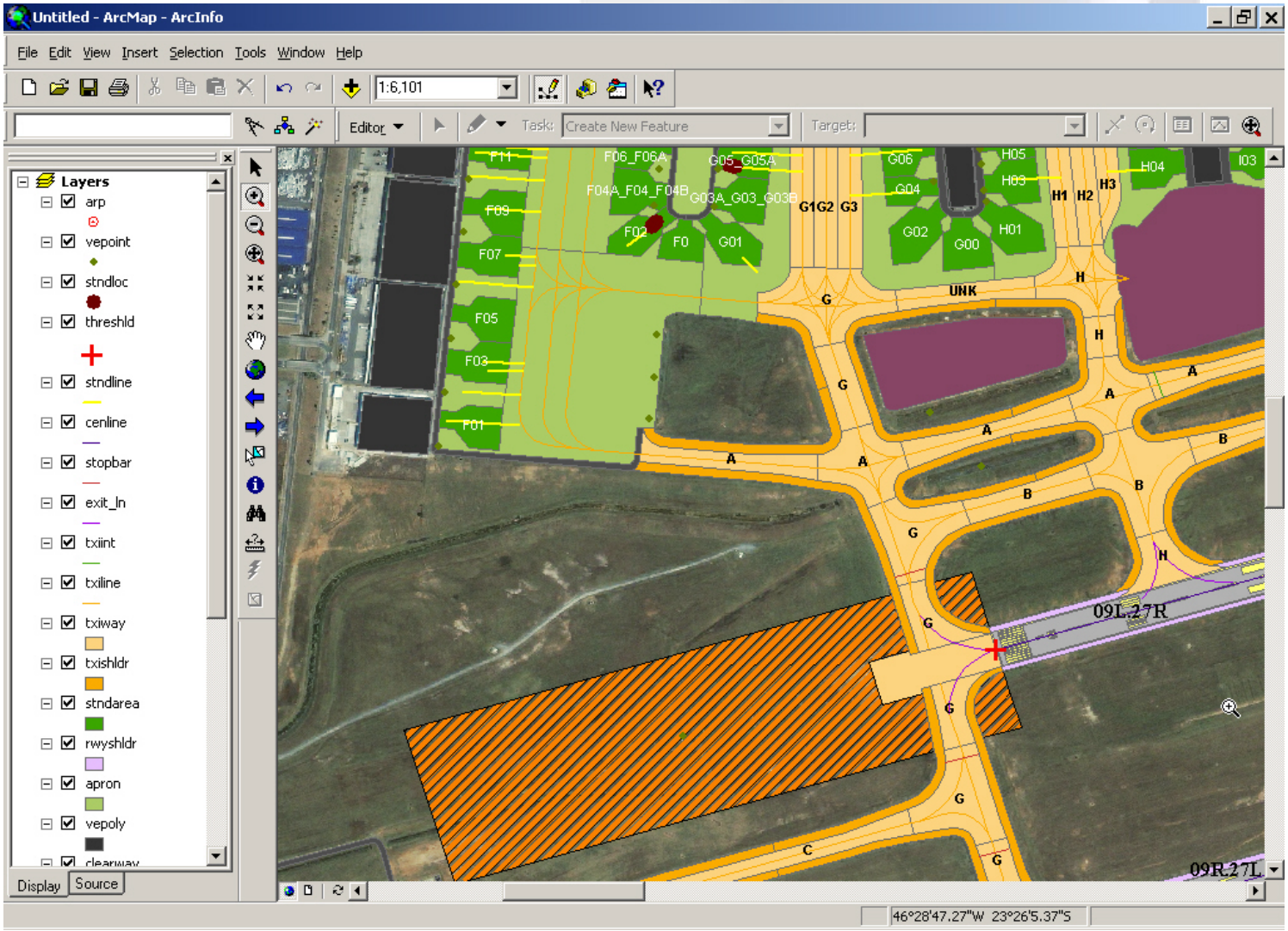
AMDB process – Vector Extraction

AMDB process – Attribution



Name	Description
feattype	Taxiway Guidance Line feature type
arptid	ICAO aerodrome location indicator
objectid	Object identifier
hacc	Horizontal accuracy (as a 95% CE)
hres	Horizontal resolution of coordinates defining the feature
source	Name of entity or organization that supplied data.
integr	Data integrity.
revdate	Date of origination or last revision of data.
Status	Status of corresponding taxiway.
wingspan	Maximal wingspan allowed on taxiway
maxspeed	Maximal allowed speed on taxiway
direc	Directionality of taxiway

AMDB process – Attribution

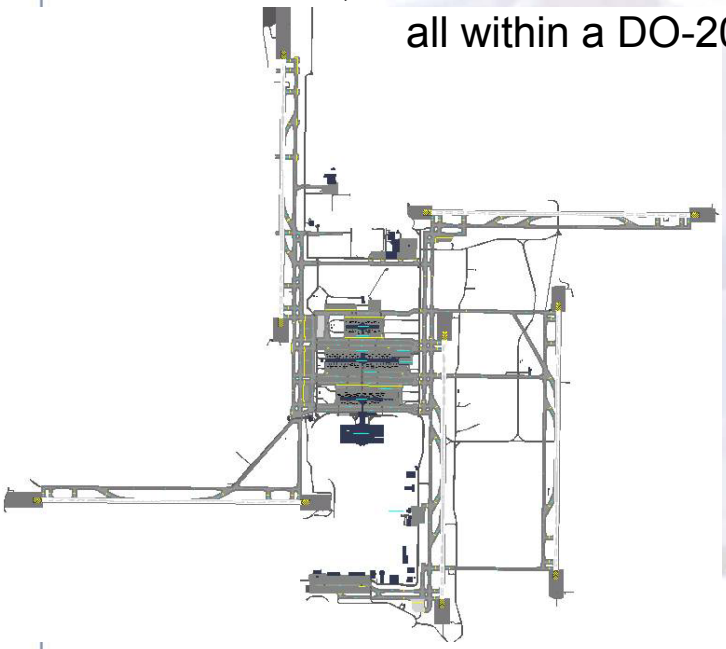


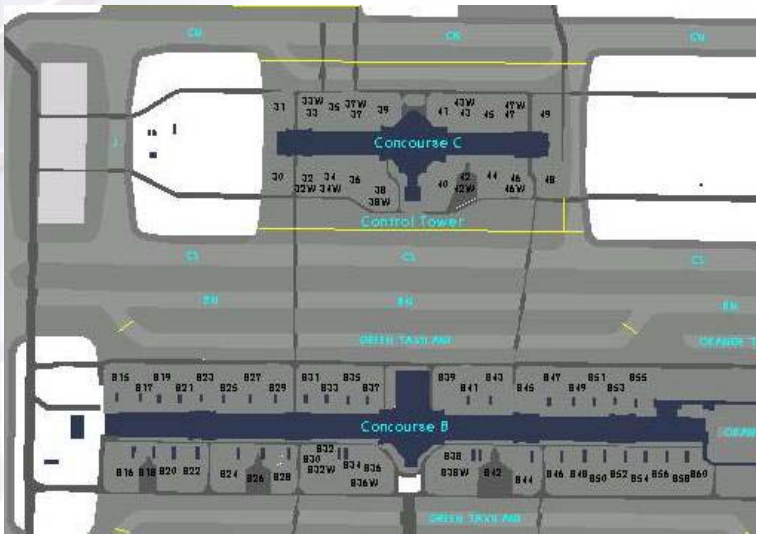
AMDB process – Statistics

Denver International Airport (KDEN)

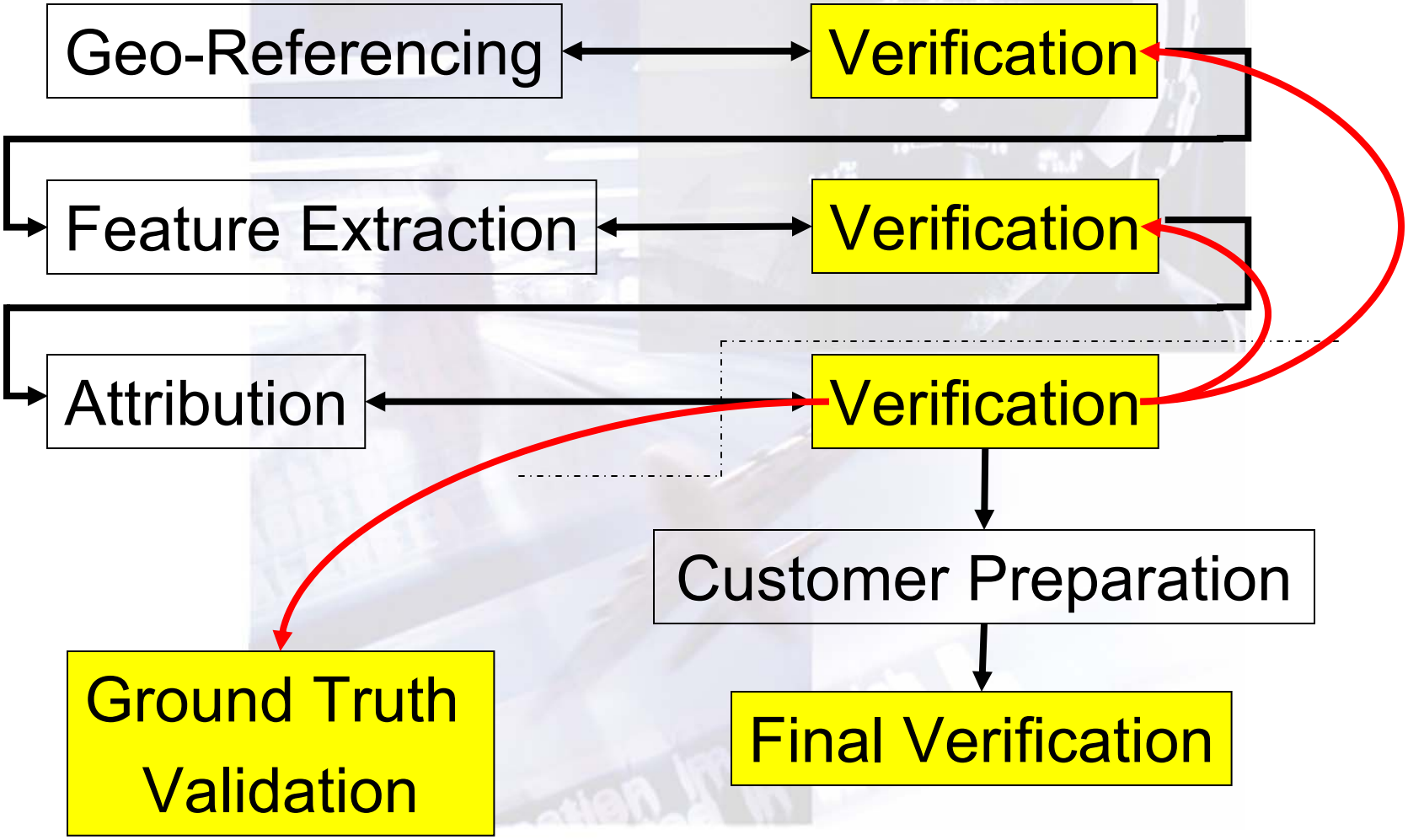
Feature Type	Arcs	Polygons	Poly Labels	Nodes	Total
Movement Areas	4,105	1,537	1,486	2,575	9,703
Centerline Guidance	1,576	0	0	1,445	3,021
Vertical Structures	186	170	169	176	701
Miscellaneous	790	613	600	851	2,854
Total	6,657	2,320	2,255	5,047	**16,279**

Assuming KDEN to be an Average:
16,279 x 277 = **4.5 million features** to be captured and validated, all within a DO-200A process, and subject to revisions





AMDB process – Verification



Jeppesen Products

[redacted]

1.0m (CE90)

1.4m (CE90)
Hi-Precision

5m (CE90)
Standard

AMDB Summary

- 300 airports world-wide
- Quality
  - 5m (CE90)
  - ED-99/DO-272 compliant
  - ED-76/DO-200A compliant
- permanent updates