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ANNEX II

REQUIREMENTS FOR SPATIAL DATA THEMES LISTED IN ANNEX I TO DIRECTIVE 2007/2/EC

7.   TRANSPORT NETWORKS

7.4.   **Air Transport Network**

7.4.1.   *Spatial Object Types*

The following spatial object types shall be used for the exchange and classification of spatial objects related to Air Transport Network:

— Aerodrome Area
— Aerodrome Category
— Aerodrome Node
— Aerodrome Type
— Air Link
— Air Link Sequence
— Air Node
— Air Route
— Air Route Link
— Airspace Area
— Apron Area
— Condition of Air Facility
— Designated Point
— Element Length
— Element Width
— Field Elevation
— Instrument Approach Procedure
— Lower Altitude Limit
— Navaid
— Procedure Link
— Runway Area
— Runway Centreline Point
— Standard Instrument Arrival
— Standard Instrument Departure
— Surface Composition
— Taxiway Area
— Touch Down Lift Off Area
— Upper Altitude Limit
— Use Restriction

7.4.1.1. Aerodrome Area (AerodromeArea)

A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft and/or helicopters.

This type is a sub-type of TransportArea.

7.4.1.2. Aerodrome Category (AerodromeCategory)

Aerodrome category concerning the scope and importance of the air traffic services offered from and to it.

This type is a sub-type of TransportProperty.

Attributes of the spatial object type AerodromeCategory

Attribute	Definition	Type	Voidability
aerodromeCategory	Value which indicates the category of an aerodrome.	AerodromeCategoryValue	

Constraints of the spatial object type AerodromeCategory

This property can only be associated with a spatial object that is an Aerodrome Node or an Aerodrome Area.

7.4.1.3. Aerodrome Node (AerodromeNode)

Node located at the aerodrome reference point of an airport/heliport, which is used to represent it in a simplified way.

This type is a sub-type of AirNode.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE AERODROMENODE

Attribute	Definition	Type	Voidability
designatorIATA	The three letter IATA designator of the aerodrome (airport/ heliport).	CharacterString	voidable
locationIndicatorICAO	The four letter ICAO location indicator of the aerodrome (airport/heliport), as listed in ICAO DOC 7910.	CharacterString	voidable

ASSOCIATION ROLES OF THE SPATIAL OBJECT TYPE AERODROMENODE

Association role	Definition	Type	Voidability
controlTowers	The set of control towers belonging to an aerodrome (airport/heliport).	Type to be specified in the spatial data theme Buildings	voidable

7.4.1.4. Aerodrome Type (AerodromeType)

A code specifying the type of aerodrome.

This type is a sub-type of TransportProperty.

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Attributes of the spatial object type AerodromeType

Attribute	Definition	Type	Voidability
aerodromeType	The type of aerodrome.	AerodromeTypeValue	

Constraints of the spatial object type AerodromeType

This property can only be associated with a spatial object that is an Aerodrome Node or Aerodrome Area.

7.4.1.5.   Air Link (AirLink)

A linear spatial object that describes the geometry and connectivity of the air network between two points in the network.

This type is a sub-type of TransportLink.

This type is abstract.

7.4.1.6.   Air Link Sequence (AirLinkSequence)

A linear spatial object, composed of an ordered collection of air links, which represents a continuous path in the air network without any branches.

This type is a sub-type of TransportLinkSequence.

7.4.1.7.   Air Node (AirNode)

A node which occurs in an air network.

This type is a sub-type of TransportNode.

This type is abstract.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE AIRNODE

Attribute	Definition	Type	Voidability
significantPoint	Attribute which indicates whether the air node is or is not a significant point.	Boolean	

7.4.1.8.   Air Route (AirRoute)

A specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services, from the end of the take-off and initial climb phase to the commencement of the approach and landing phase.

This type is a sub-type of TransportLinkSet.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE AIRROUTE

Attribute	Definition	Type	Voidability
airRouteType	Route classification.	AirRouteTypeValue	voidable

| designator | Code or designator that identifies an Air Route. | CharacterString | voidable |

7.4.1.9.   Air Route Link (AirRouteLink)

A portion of a route to be flown usually without an intermediate stop, as defined by two consecutive significant points.

This type is a sub-type of AirLink.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE AIRROUTELINK

Attribute	Definition	Type	Voidability
airRouteLinkClass	The class or type of an air route link.	AirRouteLinkClassValue	voidable

7.4.1.10. Airspace Area (AirspaceArea)

A defined volume in the air, described as horizontal projection with vertical limits.

This type is a sub-type of TransportArea.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE AIRSPACEAREA

Attribute	Definition	Type	Voidability
AirspaceAreaType	A code indicating the general structure or characteristics of a particular airspace.	AirspaceAreaTypeValue	

7.4.1.11. Apron Area (ApronArea)

A defined area, on a land aerodrome/heliport, intended to accommodate aircraft/helicopters for purposes of loading and unloading passengers, mail or cargo, and for fuelling, parking or maintenance.

This type is a sub-type of TransportArea.

7.4.1.12. Condition Of Air Facility (ConditionOfAirFacility)

State of an air transport network element with regards to its completion and use.

This type is a sub-type of ConditionOfFacility.
Constraints of the spatial object type ConditionOfAirFacility

This property can only be associated with a spatial object that is an Aerodrome Node, an Aerodrome Area or a Runway Area.

7.4.1.13. Designated Point (DesignatedPoint)

A geographical location not marked by the site of a radio navigation aid, used in defining an ATS route, the flight path of an aircraft or for other navigation or ATS purposes.

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This type is a sub-type of AirNode.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE DESIGNATEDPOINT

Attribute	Definition	Type	Voidability
designator	The coded designator of the point.	CharacterString	voidable

7.4.1.14. Element Length (ElementLength)

The physical length of the element.

This type is a sub-type of TransportProperty.
Attributes of the spatial object type ElementLength

Attribute	Definition	Type	Voidability
length	The physical length of the element.	Measure	

Constraints of the spatial object type ElementLength

This property can only be associated with a spatial object that is a Runway Area, Taxiway Area or Touch Down Lift Off Area.

7.4.1.15. Element Width (ElementWidth)

The physical width of the element.

This type is a sub-type of TransportProperty.
Attributes of the spatial object type ElementWidth

Attribute	Definition	Type	Voidability
width	The physical width of the element.	Measure	

Constraints of the spatial object type ElementWidth

This property can only be associated with a spatial object that is a Runway Area, Taxiway Area or Touch Down Lift Off Area.

7.4.1.16. Field Elevation (FieldElevation)

The aerodrome elevation as the vertical distance between the highest point of the landing area of an aerodrome and mean sea level.

This type is a sub-type of TransportProperty.
Attributes of the spatial object type FieldElevation

Attribute	Definition	Type	Voidability
altitude	Value of the field altitude.	Measure	

Constraints of the spatial object type FieldElevation

This property can only be associated with a spatial object that is an Aerodrome Node or Aerodrome Area.

7.4.1.17. Instrument Approach Procedure (InstrumentApproachProcedure)

A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en route obstacle clearance criteria apply.

This type is a sub-type of ProcedureLink.

7.4.1.18. Lower Altitude Limit (LowerAltitudeLimit)

Altitude that defines the lower limit of an air transport network object.

This type is a sub-type of TransportProperty.

Attributes of the spatial object type LowerAltitudeLimit

Attribute	Definition	Type	Voidability
altitude	Value of the altitude limit.	Measure	

Constraints of the spatial object type LowerAltitudeLimit

This property can only be associated with a spatial object that is an Air Route Link or Airspace Area.

7.4.1.19. Navaid (Navaid)

One or more Navaid Equipments providing navigation services.

This type is a sub-type of AirNode.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE NAVAID

Attribute	Definition	Type	Voidability
designator	The coded identifier given to the navaid system.	CharacterString	voidable
navaidType	Type of the navaid service.	NavaidTypeValue	voidable

7.4.1.20. Procedure Link (ProcedureLink)

A series of predetermined manoeuvres with specified protection from obstacles.

This type is a sub-type of AirLink.

7.4.1.21. Runway Area (RunwayArea)

A defined rectangular area on a land aerodrome/heliport prepared for the landing and take-off of aircraft.

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This type is a sub-type of TransportArea.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE RUNWAYAREA

Attribute	Definition	Type	Voidability
designator	The full textual designator of the runway, used to uniquely identify it at an aerodrome/ heliport which has more than one.	CharacterString	voidable
runwayType	The type of runway, either runway for airplanes or final approach and take off area (FATO) for helicopters.	RunwayTypeValue	voidable

7.4.1.22. Runway Centreline Point (RunwayCentrelinePoint)

An operationally significant position on the centreline of a runway direction.

This type is a sub-type of AirNode.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE RUNWAYCENTRELINEPOINT

Attribute	Definition	Type	Voidability
pointRole	The role of the point along the runway direction centreline.	PointRoleValue	

7.4.1.23. Standard Instrument Arrival (StandardInstrumentArrival)

A designated instrument flight rule (IFR) arrival route linking a significant point, normally on an ATS route, with a point from which a published instrument approach procedure can be commenced.

This type is a sub-type of ProcedureLink.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE STANDARDINSTRUMENTARRIVAL

Attribute	Definition	Type	Voidability
designator	The textual designator of the Standard Instrument Arrival.	CharacterString	voidable

7.4.1.24. Standard Instrument Departure (StandardInstrumentDeparture)

A designated instrument flight rule (IFR) departure route linking the aerodrome or a specific runway of the aerodrome with a specified significant point, normally on a designated ATS route, at which the en-route phase of a flight commences.

This type is a sub-type of ProcedureLink.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE STANDARDINSTRUMENTDEPARTURE

Attribute	Definition	Type	Voidability
designator	The full textual designator of the Standard Instrument Departure.	CharacterString	voidable

7.4.1.25. Surface Composition (SurfaceComposition)

The composition of an aerodrome/heliport related surface.

This type is a sub-type of TransportProperty.
Attributes of the spatial object type SurfaceComposition

Attribute	Definition	Type	Voidability
surfaceComposition	A code indicating the composition of an aerodrome/heliport related surface.	SurfaceCompositionValue	

Constraints of the spatial object type SurfaceComposition

This property can only be associated with a spatial object that is a Runway Area, Taxiway Area, Apron Area or Touch Down Lift Off Area.

7.4.1.26. Taxiway Area (TaxiwayArea)

A defined path at an aerodrome/heliport established for the taxiing of aircraft/helicopters and intended to provide a link between one part of the aerodrome and another.

This type is a sub-type of TransportArea.

ATTRIBUTES OF THE SPATIAL OBJECT TYPE TAXIWAYAREA

Attribute	Definition	Type	Voidability
designator	The textual designator of the taxiway.	CharacterString	voidable

7.4.1.27. Touch Down Lift Off Area (TouchDownLiftOff)

A load bearing area on which a helicopter may touch down or lift-off.

This type is a sub-type of AirNode.

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ATTRIBUTES OF THE SPATIAL OBJECT TYPE TOUCHDOWNLIFTOFF

Attribute	Definition	Type	Voidability
designator	The textual designator of the touch down and lift-off area.	CharacterString	voidable

7.4.1.28. Upper Altitude Limit (UpperAltitudeLimit)

Altitude that defines the upper limit of an air transport network object.

This type is a sub-type of TransportProperty.
Attributes of the spatial object type UpperAltitudeLimit

Attribute	Definition	Type	Voidability
altitude	Value of the altitude limit.	Measure	

Constraints of the spatial object type UpperAltitudeLimit

This property can only be associated with a spatial object that is an Air Route Link or Airspace Area.

7.4.1.29. Use Restriction (UseRestriction)

The restrictions to the use of an air network object.

This type is a sub-type of TransportProperty.
Attributes of the spatial object type UseRestriction

Attribute	Definition	Type	Voidability
restriction	The type of use restriction for the air network object.	AirUseRestrictionValue	

Constraints of the spatial object type UseRestriction

This property can only be associated with a spatial object that is an Air Route, Air Link (or specialized Air Link), Air Node (or specialized Air Node) or Aerodrome Area.

Changes to legislation:
There are outstanding changes not yet made to Commission Regulation (EU) No 1089/2010. Any changes that have already been made to the legislation appear in the content and are referenced with annotations.
View outstanding changes

Changes and effects yet to be applied to the whole legislation item and associated provisions

–   Annex 1 para. 8.1.3.1 words inserted by S.I. 2018/1338 reg. 13(10)(c)(ii)
–   Annex 1 para. 8.1.3.1 words inserted by S.I. 2018/1338 reg. 13(10)(c)(iii)
–   Annex 1 para. 7.3.3.1 words omitted by S.I. 2018/1338 reg. 13(10)(a)
–   Annex 1 para. 8.1.3.2 words omitted by S.I. 2018/1338 reg. 13(10)(d)(i)
–   Annex 1 para. 8.1.3.2 words omitted by S.I. 2018/1338 reg. 13(10)(d)(ii)
–   Annex 1 para. 8.1.1.1 words substituted by S.I. 2018/1338 reg. 13(10)(b)
–   Annex 1 para. 8.1.3.1 words substituted by S.I. 2018/1338 reg. 13(10)(c)(i)
–   Annex 2 para. 1.3.4(2) omitted by S.I. 2018/1338 reg. 13(11)(b)
–   Annex 2 para. 2.2(2) omitted by S.I. 2018/1338 reg. 13(11)(c)
–   Annex 2 para. 3.1.1 words omitted by S.I. 2018/1338 reg. 13(11)(d)
–   Annex 2 para. 6.1.4 words omitted by S.I. 2018/1338 reg. 13(11)(k)
–   Annex 2 para. 7.6.1.6 words omitted by S.I. 2018/1338 reg. 13(11)(l)
–   Annex 2 para. 7.9.1 words omitted by S.I. 2018/1338 reg. 13(11)(n)
–   Annex 2 para. 8.7.1 words omitted by S.I. 2018/1338 reg. 13(11)(o)(i)
–   Annex 2 para. 9.4.1 words omitted by S.I. 2018/1338 reg. 13(11)(s)(ii)
–   Annex 2 para. 9.4.5 words omitted by S.I. 2018/1338 reg. 13(11)(t)
–   Annex 2 heading words substituted by S.I. 2018/1338 reg. 13(11)(a)
–   Annex 2 para. 3.3.4 words substituted by S.I. 2018/1338 reg. 13(11)(e)(i)
–   Annex 2 para. 3.3.4 words substituted by S.I. 2018/1338 reg. 13(11)(e)(ii)
–   Annex 2 para. 4.2.1.2 words substituted by S.I. 2018/1338 reg. 13(11)(f)
–   Annex 2 para. 4.4(1) words substituted by S.I. 2018/1338 reg. 13(11)(g)
–   Annex 2 para. 5.2.4 words substituted by S.I. 2018/1338 reg. 13(11)(h)
–   Annex 2 para. 5.3.2 words substituted by S.I. 2018/1338 reg. 13(11)(i)
–   Annex 2 para. 6.1 words substituted by S.I. 2018/1338 reg. 13(11)(j)
–   Annex 2 para. 7.7.1.15 words substituted by S.I. 2018/1338 reg. 13(11)(m)
–   Annex 2 para. 8.7.1 words substituted by S.I. 2018/1338 reg. 13(11)(o)(ii)
–   Annex 2 para. 8.7.2 words substituted by S.I. 2018/1338 reg. 13(11)(p)
–   Annex 2 para. 8.7.4 words substituted by S.I. 2018/1338 reg. 13(11)(q)
–   Annex 2 para. 9.1.1 words substituted by S.I. 2018/1338 reg. 13(11)(r)
–   Annex 2 para. 9.4.1 words substituted by S.I. 2018/1338 reg. 13(11)(s)(i)
–   Art. 2(2) words substituted by S.I. 2018/1338 reg. 13(3)(a)
–   Art. 2(3) words substituted by S.I. 2018/1338 reg. 13(3)(b)
–   Art. 2(20) words substituted by S.I. 2018/1338 reg. 13(3)(c)
–   Art. 2(39)(40) inserted by S.I. 2018/1338 reg. 13(3)(d)
–   Annex 3 heading words substituted by S.I. 2018/1338 reg. 13(12)(a)
–   Annex 3 para. 1.7.5 point (3) words substituted by S.I. 2018/1338 reg. 13(12)(b)
–   Annex 4 para. 1.5 point (2) omitted by S.I. 2018/1338 reg. 13(13)(b)
–   Annex 4 para. 16.2.3 word inserted by S.I. 2018/1338 reg. 13(13)(p)(i)
–   Annex 4 para. 18.4.8 word omitted by S.I. 2018/1338 reg. 13(13)(u)(ii)
–   Annex 4 para. 4.7.1.1 word substituted by S.I. 2018/1338 reg. 13(13)(c)(i)
–   Annex 4 para. 4.7.1.1 word substituted by S.I. 2018/1338 reg. 13(13)(c)(ii)
–   Annex 4 para. 4.7.1.3.1 word substituted by S.I. 2018/1338 reg. 13(13)(e)(iii)
–   Annex 4 para. 18.4.8 word substituted by S.I. 2018/1338 reg. 13(13)(u)(i)
–   Annex 4 para. 5.1.5 words inserted by S.I. 2018/1338 reg. 13(13)(h)
–   Annex 4 para. 10.3.2 words inserted by S.I. 2018/1338 reg. 13(13)(k)
–   Annex 4 para. 11.3.1 words inserted by S.I. 2018/1338 reg. 13(13)(l)(iii)(bb)
–   Annex 4 para. 11.3.1 words inserted by S.I. 2018/1338 reg. 13(13)(l)(vii)(aa)
–   Annex 4 para. 17.4.2 words inserted by S.I. 2018/1338 reg. 13(13)(q)(i)(aa)
–   Annex 4 para. 17.4.2 words inserted by S.I. 2018/1338 reg. 13(13)(q)(i)(bb)

–   Annex 4 para. 17.4.2 words inserted by S.I. 2018/1338 reg. 13(13)(q)(ii)
–   Annex 4 para. 17.4.3 words inserted by S.I. 2018/1338 reg. 13(13)(r)(ii)(bb)
–   Annex 4 para. 18.4.2 words inserted by S.I. 2018/1338 reg. 13(13)(s)(ii)
–   Annex 4 para. 4.7.1.2 words omitted by S.I. 2018/1338 reg. 13(13)(d)(i)
–   Annex 4 para. 4.7.1.2 words omitted by S.I. 2018/1338 reg. 13(13)(d)(ii)
–   Annex 4 para. 4.7.3.4 words omitted by S.I. 2018/1338 reg. 13(13)(f)
–   Annex 4 para. 11.3.1 words omitted by S.I. 2018/1338 reg. 13(13)(l)(iv)
–   Annex 4 para. 11.3.1 words omitted by S.I. 2018/1338 reg. 13(13)(l)(v)
–   Annex 4 para. 11.3.1 words omitted by S.I. 2018/1338 reg. 13(13)(l)(vi)
–   Annex 4 para. 11.3.1 words omitted by S.I. 2018/1338 reg. 13(13)(l)(vii)(bb)
–   Annex 4 para. 11.4.1 point (3)(b) words omitted by S.I. 2018/1338 reg. 13(13)(m)
–   Annex 4 para. 13.2.1.1 words omitted by S.I. 2018/1338 reg. 13(13)(n)
–   Annex 4 para. 13.3 point (3) words omitted by S.I. 2018/1338 reg. 13(13)(o)
–   Annex 4 para. 16.2.3 words omitted by S.I. 2018/1338 reg. 13(13)(p)(ii)
–   Annex 4 para. 17.4.3 words omitted by S.I. 2018/1338 reg. 13(13)(r)(i)
–   Annex 4 para. 18.4.7 words omitted by S.I. 2018/1338 reg. 13(13)(t)
–   Annex 4 para. 19.1 words omitted by S.I. 2018/1338 reg. 13(13)(v)
–   Annex 4 para. 11.3.1 words omted by S.I. 2018/1338 reg. 13(13)(l)(ix)
–   Annex 4 heading words substituted by S.I. 2018/1338 reg. 13(13)(a)
–   Annex 4 para. 4.7.1.3.1 words substituted by S.I. 2018/1338 reg. 13(13)(e)(i)
–   Annex 4 para. 4.7.1.3.1 words substituted by S.I. 2018/1338 reg. 13(13)(e)(ii)
–   Annex 4 para. 4.8 point (4) words substituted by S.I. 2018/1338 reg. 13(13)(g)(i)
–   Annex 4 para. 4.8 point (5) words substituted by S.I. 2018/1338 reg. 13(13)(g)(ii)
–   Annex 4 para. 6.9.1.1 words substituted by S.I. 2018/1338 reg. 13(13)(i)
–   Annex 4 para. 9.1 point (1) words substituted by S.I. 2018/1338 reg. 13(13)(j)(i)
–   Annex 4 para. 9.1 point (2) words substituted by S.I. 2018/1338 reg. 13(13)(j)(ii)
–   Annex 4 para. 11.3.1 words substituted by S.I. 2018/1338 reg. 13(13)(l)(i)
–   Annex 4 para. 11.3.1 words substituted by S.I. 2018/1338 reg. 13(13)(l)(ii)
–   Annex 4 para. 11.3.1 words substituted by S.I. 2018/1338 reg. 13(13)(l)(iii)(aa)
–   Annex 4 para. 11.3.1 words substituted by S.I. 2018/1338 reg. 13(13)(l)(viii)
–   Annex 4 para. 17.4.3 words substituted by S.I. 2018/1338 reg. 13(13)(r)(ii)(aa)
–   Annex 4 para. 18.4.2 words substituted by S.I. 2018/1338 reg. 13(13)(s)(i)
–   Annex 4 para. 18.4.8 words substituted by S.I. 2018/1338 reg. 13(13)(u)(iii)
–   Annex 7 para. 2 words substituted by S.I. 2018/1338 reg. 13(14)