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Zone geografiche UAS

Documentazione «Modello di geodati»

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Modello di geodati

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Contenuto	Il presente documento descrive il modello di geodati per le «zone geografiche UAS» definite per motivi di sicurezza, di protezione contro i pericoli, di rispetto della sfera privata o di protezione dell'ambiente. A tal fine, sulla base dello standard ED-318 «Technical Specification for Geographical Zones and U-Space Data Provision and Exchange» di EUROCAE è stato definito un modello specifico alla Svizzera in INTERLIS 2.4[1].
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Cronologia del documento

Versione	**Data**	**Osservazioni**
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2.0	19.03.2025	Versione approvata (ED-318)

[1] eCH-0031 INTERLIS 2 – Manuale di riferimento V2.1.0 | eCH E-Government Standards (disponibile in tedesco e in francese)

Indice

Abbreviazioni

AESA	Agenzia europea per la sicurezza aerea (European Union Aviation Safety Agency)
AMC/GM	Acceptable Means of Compliance and Guidance Material
CH1903+	Sistema di riferimento; sistema di coordinate svizzero
CHBase	Moduli di base della Confederazione per modelli di geodati minimi
EPSG	Sistema di codifica per sistemi di coordinate e proiezioni
EUROCAE	European Organization for Civil Aviation Equipment
GCG	Organo federale di coordinamento della geoinformazione
GeoJSON	Formato aperto per dati geografici basato su Java-Script Object Notation
INTERLIS	Metodo di descrizione e di trasferimento di geodati secondo lo standard eCH-0031
MN95	Quadro di riferimento per le coordinate nazionali svizzere (1995)
UAS	Unmanned aircraft system; sistema di aeromobili senza occupanti
UE	Unione europea
UFAC	Ufficio federale dell’aviazione civile
WGS84	World Geodetic System 1984; sistema di riferimento geodetico

Documenti di riferimento

[1] EUROCAE (2024): ED-318 - Technical Specification for Geographical Zones and U-Space data provision and exchange. Versione di gennaio 2024

[2] GCG (2011): Moduli di base della Confederazione per i «modelli di geodati minimi» (CHBase), versione 1.0 del 30.08.2011 (disponibili in tedesco e in francese)

[3] AESA (2022): AMC & GM to Regulation (EU) 2019/947 – Issue 1, Amendment 2, versione del 14.09.2024

[4] eCH E-Government Standard (2024): *eCH-0031 INTERLIS 2 – Manuale di riferimento*. Versione del 02.07.2024 (disponibile in tedesco e in francese)

[5] IETF Datatracker (2016): *RFC 7946* – The GeoJSON format. Versione di agosto 2016

[6] EUROCONTROL (2023): *GitHub – LayeredGeoJSON/LayeredGeoJSON-Specification*. Versione del 03.02.2023

1 Introduzione

Il modello di geodati per le «zone geografiche UAS» (ingl. *UAS geographical zone*) rappresenta una base importante per lo sviluppo di un sistema di aeromobili senza equipaggio (UAS).

Una «zona geografica UAS» (nota anche come zona soggetta a restrizioni di volo per i droni) è una parte di spazio aereo stabilita dall'autorità competente ai fini della geo-consapevolezza che consente, limita o esclude l'esercizio di UAS, per poter considerare i rischi relativi alla sicurezza, alla protezione della sfera privata o dell'ambiente correlati a tale esercizio.

L'obiettivo della geo-consapevolezza (ingl. *geo-awareness*) è rilevare ed evitare possibili violazioni delle limitazioni dello spazio aereo.

2 Condizioni quadro

Il 24 maggio 2019, la Commissione dell'Unione europea (UE) ha adottato il regolamento di esecuzione (UE) 2019/947 relativo a norme e procedure per l'esercizio di aeromobili senza equipaggio. L'articolo 15 di tale regolamento stabilisce condizioni operative per le zone geografiche UAS e vincola gli Stati membri a designare zone geografiche UAS a fini di geo-consapevolezza e a provvedere affinché le informazioni su dette zone, incluso il loro periodo di validità, siano rese pubbliche in un formato digitale unico. Nell'UE il regolamento di esecuzione (UE) 2019/947 è applicato dal 2021, mentre la Svizzera l'ha recepito il 1 gennaio 2023, contemporaneamente all'entrata in vigore dell'ordinanza rivista del DATEC sulle categorie speciali di aeromobili (OACS).

Con la partecipazione della Svizzera, l'AESA ha stabilito le basi tecniche e le condizioni quadro per l'attuazione. Come standard per un formato di dati digitale unico e comune viene utilizzato il modello di dati «UAS Geographical Zone» di EUROCAE (cfr. [1], punto 4.2). In questo documento sono definiti il contenuto e la struttura delle zone geografiche UAS. Altri requisiti e prescrizioni rilevanti in relazione all'articolo 15 del regolamento di esecuzione (UE) 2019/947 sono consultabili nei documenti «Acceptable Means of Compliance» (AMC) e «Guidance Material» (GM) [3].

Il presente modello di geodati costituisce un'implementazione in INTERLIS 2 secondo lo standard svizzero eCH-0031 [4] per descrivere geodati. Vengono inoltre utilizzati i moduli di base della Confederazione (CHBase) [2]. Si tratta di una collezione di definizioni generiche INTERLIS uniformi a sostegno dell'armonizzazione tecnica e materiale dei dati. La modellizzazione è effettuata in inglese.

Il modello di geodati è basato sul quadro di riferimento MN95 nel sistema di riferimento CH1903+. Poiché alla fine i dati devono essere messi a disposizione nel sistema di riferimento «World Geodetic System» (WGS84) e in formato GeoJSON [5] con l'estensione LayeredGeoJSON [6], in seguito vengono trasformati o convertiti con strumenti idonei.

3 Modello di dati concettuale – Catalogo degli oggetti

Nel catalogo degli oggetti qui di seguito, gli elementi contemplati nei moduli di base CHBase sono scritti in *corsivo*. Si rinuncia a descrivere questi elementi nel presente documento.

Le descrizioni degli elementi contenuti nel catalogo degli oggetti sono state riprese direttamente dal modello di dati «UAS Geographical Zone» e perciò mantenuti in inglese.

Si rinuncia anche a determinati elementi del modello «UAS Geographical Zone» (v. all. 7.5), in quanto attualmente non applicabili in Svizzera. Ne risulta un «Profilo CH» specifico, compatibile con lo standard europeo e con gli AMC/GM.

3.1 Intervalli di valori – Tipi di dati

Intervalli di valori per tipi di dati (Domains).

CodeZoneIdentifierType	
A coded identifier of an UAS Geographical Zone.	
Tipo	**Descrizione**
TEXT*7	A string of maximum 7 characters with upper case characters, numbers and “_” or “-“ only).

DateTimeType	
A date and time instant, represented as a string specified by RFC 3339.	
Tipo	**Descrizione**
XML DATE/TIME	Date and time format shall comply with RFC 3339, in the form YYYY-MM-DDThh:mm:ss.ss and in the local time.

TextShortType	
A free text with a maximum length of 200 characters.	
Tipo	**Descrizione**
TEXT*200	A string of maximum 200 characters.

TimeInterval	
A period of time represented as a string formatted according to the ISO 8601 rules.	
Tipo	**Descrizione**
TEXT*11	Formatted string according to the ISO 8601 rules for time intervals, in the format PnnDTnnHnnM. • P indicates that the values is a time interval (mandatory) • nnD indicates the number of days comprised in the interval (optional) • T indicates the start of the time block (mandatory) • nnH indicates the number of hours comprised in the interval (optional)

	• nnM indicates the number of minutes comprised in the interval (optional)

TimeType	
A time instant represented by a string according to the ISO 8601 standard.	
Tipo	**Descrizione**
XML TIME	String in the form hh:mm:ss.ss following the ISO 8601 standard and in the local time.

3.2 Intervalli di valori – Elenchi di codici

Intervalli di valori per elenchi ed elenchi di codici.

AddInfo	
The value of a code which is a generic placeholder and refers to the corresponding entry in the multilingual code list for predefined and generic additional information text elements, which may be used as display texts. Only values that exist in the code list should be used.	
Valore	**Descrizione**
EXP01	Code as placeholder for predefined extended property text 1.
EXP02	Code as placeholder for predefined extended property text 2.
EXP03	Code as placeholder for predefined extended property text 3.
EXP04	Code as placeholder for predefined extended property text 4.
EXP05	Code as placeholder for predefined extended property text 5.
EXP06	Code as placeholder for predefined extended property text 6.
EXP07	Code as placeholder for predefined extended property text 7.
EXP08	Code as placeholder for predefined extended property text 8.
EXP09	Code as placeholder for predefined extended property text 9.
EXP10	Code as placeholder for predefined extended property text 10.

CodeAuthorityRole	
Defines the role of an authority in relation with the UAS Geographical Zone, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
AUTHORIZATION	The designated Authority shall be contacted to get an authorization before accessing the UAS Geographical Zone.
NOTIFICATION	The designated Authority shall be notified of the UAS flight prior to accessing the UAS Geographical Zone.

INFORMATION	The designated Authority is a general purpose point of contact for the UAS in the zone (out of authorization and notification).

CodeDaylightEventType	
A time identified in relation with an astronomical event, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
SR	Civil sunrise.
SS	Civil sunset.

CodeGeometrySubType	
Indicates what type of geometry sub-type is being provided (currently only circle is supported).	
Valore	**Descrizione**
Circle	Circular geometry.

CodeGeometryType	
Indicates what type of geometry is being used to describe the feature.	
Valore	**Descrizione**
Polygon	A Polygon geometry type.
Point	A Point geometry type.

CodeRegulationLevel	
Indicates the regulation level that establishes the UAS Geographical Zone, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
CANTONAL	The UAS Geographical Zone is established by a cantonal regulation.
FEDERAL	The UAS Geographical Zone is established by a federal regulation.

CodeVerticalReferenceType	
A coded value that indicates a vertical reference system, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
AGL	Height above ground/surface level.
AMSL	Altitude above Mean Sea Level as defined by EGM-96 or a geoid model specified in the dataset metadata.
WGS84	Height above the WGS84 ellipsoid.

CodeWeekDayType	
A coded value indicating a day of the week, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
MON	Monday.
TUE	Tuesday.
WED	Wednesday.
THU	Thursday.
FRI	Friday.
SAT	Saturday.
SUN	Sunday.
Any	Any day of the week.

CodeYesNoType	
A coded value that indicates a choice between a positive (yes) and a negative (no) applicability, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
Yes	The situation is true according to the property default definition.
No	The situation is not true.

CodeZoneReasonType	
A coded indication of a reason that justifies the existence of an UAS Geographical Zone, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
AIR_TRAFFIC	Due to the presence of air traffic.
SENSITIVE	Due to the presence of a sensitive site, in the vicinity of which the presence of drones could be considered a potential threat.
PRIVACY	Due to the presence of a sensitive site for which the presence of drones could rise privacy concerns.
POPULATION	Due to the presence of a significantly populated area.
NATURE	Due to the presence of a wildlife/nature sanctuary or another area with sensitive nature/fauna.
NOISE	Due to noise abatement regulations.
EMERGENCY	Due to activity related to a situation that requires urgent intervention (such as an accident).

DAR	Due to the application of a dynamic airspace reconfiguration in a U-space volume, temporarily segregating the zone for UAS operations.

CodeZoneType	
An indicator of the restriction level for the zone, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
USPACE	Indicates a zone subject to the requirements of Regulation EU 664/2021.
PROHIBITED	Indicates that the flight of UAS is prohibited during the applicability time.
REQ_AUTHORIZATION	Indicates that the flight of UAS is subject to explicit authorization requirements during the time of applicability. Note that one Authority contact with the role Authorization should be provided in this case.
CONDITIONAL	Indicates that access in the UAS Geographical Zone is allowed only to operators fulfilling a special condition, which is defined as a logical expression.
NO_RESTRICTION	Indicates that the zone may be used during the applicability time without any special permissions or restrictions.

CodeZoneVariant	
Allows an indication that the definition of an UAS Geographical Zone is specifically customized for a particular UAS or operator.	
Valore	**Descrizione**
COMMON	The Zone is provided with its common definition, valid for any UAS and operator.

Restriction	
The value of a code which is a generic placeholder and refers to the corresponding entry in the multilingual code list for predefined and generic restriction text elements, which may be used as display texts. Only values that exist in the code list should be used.	
Valore	**Descrizione**
REC01	Code as placeholder for predefined restriction condition text 1.
REC02a	Code as placeholder for predefined restriction condition text 2a.
REC02b	Code as placeholder for predefined restriction condition text 2b.
REC02c	Code as placeholder for predefined restriction condition text 2c.
REC02	Code as placeholder for predefined restriction condition text 2.
REC03	Code as placeholder for predefined restriction condition text 3.

REC04	Code as placeholder for predefined restriction condition text 4.
REC05	Code as placeholder for predefined restriction condition text 5.
REC06	Code as placeholder for predefined restriction condition text 6.
REC07	Code as placeholder for predefined restriction condition text 7.
REC08	Code as placeholder for predefined restriction condition text 8.
REC09	Code as placeholder for predefined restriction condition text 9.
REC10	Code as placeholder for predefined restriction condition text 10.

UomDistance	
Defines units of measurement used for distances.	
Valore	**Descrizione**
m	Metres

URNType	
A string of characters that complies with the Uniform Resource Name (URN) scheme as specified in the RFC 2141.	
Valore	**Descrizione**
CHGeo2004	The geoid model used in Switzerland.

3.3 Strutture

3.3.1 Struttura «LocalisedUri»

Structure containing localised Uniform Resource Identifier (URI).

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
Language	1	*International-Codes_V2.Language-Code_ISO639_1*	Standard language code (ISO639_1) based on the CHBase [2] model convention
Text	1	URI	Uniform Resource identifier (URI)

3.3.2 Struttura «MultilingualUri»

Structure containing multilingual elements of localised Uniform Resource Identifier (URI).

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
LocalisedTex-tUri	1..*	*UASGeographical-Zone_V2.LocalisedUri*	Text as localised Uniform Resource Identifier (URI)

3.3.3 Struttura «LocalisedTextShort»

Structure containing localised texts (max. 200 characters).

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
Language	1	*International-Codes_V2.Language-Code_ISO639_1*	Standard language code (ISO639_1) based on the CHBase [2] model convention
Text	1	TEXT*200	Localised text (max. 200 characters)

3.3.4 Struttura «MultilingualTextShort»

Structure containing multilingual elements of localised text (max. 200 characters).

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
LocalisedShort	1..*	*LocalisedTextShort*	Multilingual text (max. 200 characters)

3.3.5 Struttura «LocalisedTextLong»

Structure containing localised texts (max. 1000 characters).

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
Language	1	*International-Codes_V2.Language-Code_ISO639_1*	Standard language code (ISO639_1) based on the CHBase [2] model convention
Text	1	TEXT*1000	Localised text (max. 1000 characters)

3.3.6 Struttura «MultilingualTextLong»

Structure containing multilingual elements of localised text (max. 1000 characters).

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
LocalisedLong	1..*	*LocalisedTextLong*	Multilingual text (max. 1000 characters)

3.4 Tema «CodelistTexts»

Topic for code lists with unique object identification (UUID)

3.4.1 Classe «AddInfoText»

Class containing a multilingual code list for predefined and generic additional information text elements.

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
Code	1	AddInfo	An extended property code which refers to an enumeration of codes.
Description	1	Multilingual-TextShort	Multilingual description text (max. 200 characters).

3.4.2 Classe «RestrictionText»

Class containing a multilingual code list for predefined and generic restriction text elements.

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
Code	1	Restriction	A restriction code which refers to an enumeration of codes.
Description	1	Multilingual-TextShort	Multilingual description text (max. 200 characters).

3.5 Tema «UASZones»

Topic for geographical UAS zones with unique object identification (UUID).

3.5.1 Classe «UASZoneVersion»

A specific version of an airspace of defined dimensions, above the land areas or territorial waters of a state, within which a particular restriction or condition for UAS flights applies.

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
identifier	1	CodeZoneIdentifierType	A string of characters that uniquely identifies the UAS Geographical Zone within the State/Territory identified by the country member.

country	1	*International-Codes_V2. CountryCode_ ISO3166_1*	The State that has the authority to declare the zone. A 3 letter identifier using the ISO 3166-1 alpha-3 standard (CHE for Switzerland).
name	1	Multilingual-TextShort	A multilingual text name by which the zone may be known by the public or by the UAS community. <u>Important</u>: Languages DE, FR, IT and EN have to be provided. Use the main language value as default for the other languages if no specific value in a certain language exists. The permissible length is limited to 200 characters
type	1	CodeZoneType	An indication if flying in the zone is subject to one of the values in CodeZoneType.
variant	1	CodeZoneVariant	An indication whether the zone is provided with its common definition (whereas a customized definition for a particular user is not applicable herein).
restrictionConditions	1	Restriction	An indication of the conditions under which the zone can be used.
region	1	Numerisch	Identifies the canton where the UAS Geographical Zone is located. 0=Switzerland; 1 to 26 = canton number from Federal Statistical Office; 27=Liechtenstein.
reason	1	CodeZoneReasonType	A coded indication for the reason that led to the establishment of the zone.
regulationLevel	1	CodeRegulationLevel	Indicates whether the UAS Geographical Zone underlies to a cantonal or a federal regulation.
regulationExemption	0..1	CodeYesNoType	Indicates that exemptions from the national or European regulations are allowed in the UAS Geographical Zone, that will be detailed via the message member.
message	0..1	Multilingual-TextLong	Multilingual message to be displayed to the user of the zone, typically on the RPS for the Remote Pilot, to make him/her aware about specific information associated with the zone.
extendedProperties	1	AddInfo	This is a placeholder, allowing data providers to customize the implementation and provide additional information. In Switzerland, this is used to

			inform about exemption permits or to provide other relevant indications.

3.5.2 Classe «DatasetMetadata»

Global information that qualifies and constrains the usage of the data contained in the associated data set.

Attributo	Molteplicità	Tipo di dati (intervallo di valori)	Descrizione
validFrom	1	DateTimeType	The date and time starting from when the information contained in the data set is applicable, which means in particular the date of publication.
validTo	0..1	DateTimeType	The date and time until when the information contained in the data set is applicable.
provider	1	MultilingualTextShort	Multilingual information (such as name, contact, details) of the organization providing the data set.
issued	1	DateTimeType	The date and time when the data set was issued.
description	0..1	MultilingualTextShort	Multilingual textual description of the data set content, extent, purpose, etc.
otherGeoid	0..1	URNType	Identification of another geoid model than EGM96 which is used for the vertical limits that are expressed with reference to the Mean Sea Level.
technicalLimitation	0..1	MultilingualTextShort	Multilingual constraints or caution reasons related to the use of the data contained in the data set, in particular with regard to the quality of the data.

3.5.3 Classe «FeatureCollection»

A feature collection class containing zero or more features representing UAS Geographical Zones.

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
collectionName	1	TextShortType	A free text name to identify the UAS Geographical Zone data set.
bbox	0..1	TEXT*150	Rectangular surface that comprises the entire area.

3.5.4 Classe «Feature»

A GeoJSON feature representing an UAS Geographical Zone.

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
-	-	-	-

3.5.5 Classe «Geometry»

A GeoJSON geometry as defined in the RFC 7946 standard, including additional foreign members based on the LayeredGeoJSON extension.

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione
geometryType	1	CodeGeometryType	Type of geometry being used to describe the feature.
coordinatesPoint	0..1	*GeometryCHLV95_V2.Coord2*	A point shape using the CH1903+ coordinate reference system (EPSG:2056).
coordinatesPolygon	0..1	Einzelfläche (SURFACE)	A polygonal shape using the CH1903+ coordinate reference system (EPSG:2056). There must be a single exterior and no circles. Interior holes are allowed.

3.5.6 Classe «VerticalLayer»

An extension to GeoJSON which provides a vertical layer extent to all standard geometries.

Attributo	Molte-plicità	Tipo di dati (intervallo di valori)	Descrizione

upper	1	Numerisch (0..99999)	The value of the upper limit of the UAS Geographical Zone expressed in a unit of measurement specified in uom, in relation with the vertical datum specified in the upperReference member.
upperReference	1	CodeVerticalReferenceType	The vertical reference for the upper limit of the UAS Geographical Zone.
lower	1	Numerisch (0..99999)	The value of the lower limit of the UAS Geographical Zone expressed in a unit of measurement specified in uom, in relation with the vertical datum specified in the lowerReference member.
lowerReference	1	CodeVerticalReferenceType	The vertical reference for the lower limit of the UAS Geographical Zone.
uom	1	UomDistance	The unit of measurement in which the upper and lower values are expressed. Only metres are allowed.

3.5.7 Classe «HorizontalExtent»

An extension to GeoJSON which provides the possibility to specify a horizontal “circle” extent for a point geometry.

Attributo	Molteplicità	Tipo di dati (intervallo di valori)	Descrizione
subType	1	CodeGeometrySubType	Fixed value for circle.
radius	1	Numerisch (0 .. 999999)	Distance, in metres, from the associated point along the surface of the Earth that this geometry extends.

3.5.8 Classe «Metadata»

Information that qualifies and provides traceability for the zone operational data, which is not included in the UAS Geographical Zone data provided to the users.

Attributo	Molteplicità	Tipo di dati (intervallo di valori)	Descrizione

creationDateTime	1	DateTimeType	Indicates when the zone was initially created.
updateDateTime	1	DateTimeType	Indicates when the characteristics of the zone have been last time updated.
originator	1	TextShortType	Identifies the originator of the UAS Geographical Zone.

3.5.9 Classe «Authority»

A relevant authority that is in charge for authorizing, being notified or providing information for UAS operations in the UAS Geographical Zone.

Attributo	Molteplicità	Tipo di dati (intervallo di valori)	Descrizione
authorityName	1	Multilingual-TextShort	The official multilingual name of a public or private authority.
service	0..1	Multilingual-TextShort	The multilingual name of a specific department or service within the organisation.
contactName	0..1	Multilingual-TextShort	The multilingual name or role of a specific person that needs to be contacted within the organisation.
siteURL	1	MultilingualUri	The multilingual URL of the public internet site through which the organisation may be contacted.
email	0..1	TextShortType	The e-mail address by which the organisation may be contacted.
phone	0..1	TextShortType	A phone number at which the organization may be contacted.

3.5.10 Classe «AuthorityRequirements» (classe di associazione)

Defines a relevant authority that is in charge for authorizing, being notified or providing information for UAS operations in the UAS Geographical Zone.

Attributo	Molteplicità	Tipo di dati (intervallo di valori)	Descrizione
purpose	1	CodeAuthority-Role	The role of the Authority in relation with the zone.

intervalBefore	1	TimeInterval	The minimal time interval required between notification or authorization request and starting to operate in the zone.

3.5.11 Classe «DailyPeriod»

Specifies a daily applicability schedule of the zone, within the time when the area exists according to the TimePeriod information.

Attributo	Molteplicità	Tipo di dati (intervallo di valori)	Descrizione
day	1..6	CodeWeekDayType	The day(s) of the week.
startTime	0..1	TimeType	The daily start time, if startEvent is not specified.
startEvent	0..1	CodeDaylightEventType	The event triggering the start of the applicable time period, if startTime is not specified.
endTime	0..1	TimeType	The daily end time, if endEvent is not specified.
endEvent	0..1	CodeDaylightEventType	The event triggering the end of the applicable time period, if endTime is not specified.

3.5.12 Classe «TimePeriod»

Defines, if applicable, the limited applicability dates and time of the zone, including an eventual daily schedule.

Attributo	Molteplicità	Tipo di dati (intervallo di valori)	Descrizione
startDateTime	0..1	DateTimeType	The date and time when the UAS Geographical Zone starts to exist. When not provided, it means that the zone is permanent and such zone might still have a schedule specified. It can be also used in order to specify that a zone becomes applicable after the start of validity.

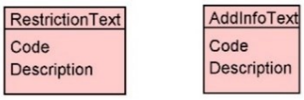
endDateTime	0..1	DateTimeType	The date and time when the UAS Geographical Zone to exist. When not provided, it means that the zone is permanent and such zone might still have a schedule specified.
annually	1	CodeYesNo-Type	Special marking of annually recurring temporary zones, that is used only in the context of Swiss UAS Geographical Zones.

4 Modello di dati concettuale – Diagrammi di classe UML

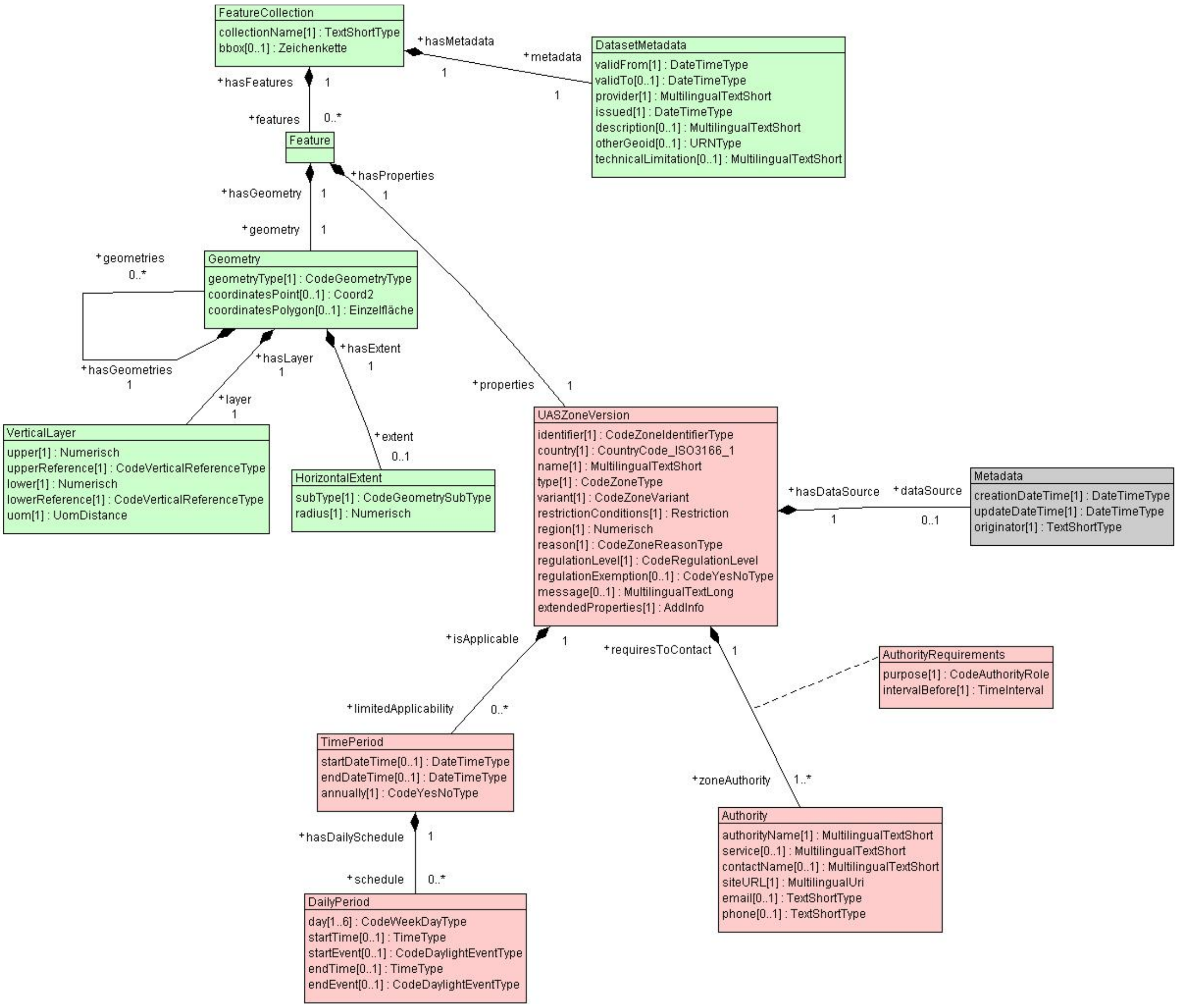
Il modello di geodati «UASGeographicalZone_V2» consente di estendere eventualmente i tipi di oggetto indipendentemente dal modello di dati.

Panoramica dei temi

Tema «CodelistTexts»



Tema «UASZones»



5 Modello di rappresentazione

La rappresentazione delle zone geografiche UAS risulta dagli attributi «restrictionConditions» e «regulationLevel» della classe «UASZoneVersion» (v. cap. 0). Il colore di riempimento e il bordo delle zone geografiche UAS viene determinato dal valore di «restrictionConditions» e segue un "sistema a semaforo" andando dal rosso per le zone più restrittive (REC01) al verde per le zone senza restrizioni (REC05). L'attributo «regulationLevel» serve a distinguere a livello visivo le zone geografiche UAS regolate a livello cantonale (CANTONAL) da quelle e livello federale (FEDERAL).

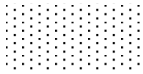
La rappresentazione grafica è definita in linea generale come segue:

Valore dell'attributo «UASZoneVersion. restrictionConditions» [2]	**Colore (R/G/B)**	**Rappresentazione**	**Simbolo / Attribuzione** [3]
REC01	Riempimento: 255/0/0 Bordo: 208/0/0	Uniforme; trasparenza 40%	type= PROHIBITED
REC02a	Riempimento: 253/124/60 Bordo: 216/90/32	Uniforme; trasparenza 40%	type= REQ_AUTHORIZATION
REC02b	Riempimento: 255/195/92 Bordo: 217/156/58	Uniforme; trasparenza 40%	type= REQ_AUTHORIZATION
REC02c	Riempimento: 255/170/0 Bordo: 255/170/0	Linee diagonali tratteggiate (45° verso destra, distanza tra le linee 10 punti, spessore delle linee 0.5 punti), spessore del bordo 1.5 punti	type= REQ_AUTHORIZATION
REC03	Riempimento: 250/235/54 Bordo: 230/211/0	Uniforme; trasparenza 40%	type= CONDITIONAL
REC04	Riempimento: 0/176/240 Bordo: 0/131/179	Uniforme; trasparenza 40%	type= USPACE
REC05	Riempimento: 121/195/20 Bordo: 104/166/17	Uniforme; trasparenza 40%	type= NO_RESTRICTION

[2] Secondo l'elenco di codici «***Restriction***» (v. cap. 3.2).

[3] Secondo l'elenco di codici «***CodeZoneType***» (v. cap. 3.2).

Esclusivamente per le zone cantonali, alla colorazione del “sistema a semaforo” viene sovrapposta una tratteggiatura puntinata nera.

Valore dell’attributo «UASZoneVersion. regulationLevel» [4]	**Colore (R/G/B)**	**Rappresentazione**	**Simbolo / Attribuzione**
CANTONAL	0/0/0	Riempimento puntinato; trasparenza 0%	

L'attuazione effettiva dipende dalle possibilità tecniche dei rispettivi sistemi di pubblicazione. In questa sede si rinuncia a una definizione dettagliata. In particolare per quanto riguarda la gestione delle sovrapposizioni di diverse zone geografiche UAS.

[4] Secondo l’elenco di codici «***CodeRegulationLevel***» (v. cap. 3.2).

6 Funzione di filtro

Per convertire i dati INTERLIS in formato GeoJSON affinché siano pubblicati, sono necessari i filtri e le impostazioni seguenti.

- Le coordinate degli attributi «coordinatesPoint» e «coordinatesPolygon» della classe «Geometry» e «bbox» della classe «FeatureCollection» vanno compilati nel WGS84.
- La classe «Metadata» va tralasciata.
- Gli attributi «regulationLevel» della classe «UASZoneVersion» e «annually» della classe «TimePeriod» vanno tralasciati.
- I dati devono essere codificati in formato UTF-8.

7 Allegato

7.1 Elenco di codici «RestrictionText»

Code	Description (de)	Description (fr)	Description (it)	Description (en)
REC01	Der Betrieb von unbemannten Luftfahrzeugen ist verboten.	L’exploitation d’aéronefs sans occupants est interdite.	L’esercizio di aeromobili senza occupanti è vietato.	The operation of unmanned aircraft is prohibited.
REC02a	Der Betrieb von unbemannten Luftfahrzeugen ist nur mit Ausnahmebewilligung erlaubt.	L'exploitation d'aéronefs sans occupants n'est autorisée que avec une autorisation exceptionnelle.	L’esercizio di aeromobili senza occupanti è consentito solo con permesso d’esenzione.	The operation of unmanned aircraft is only allowed with exemption permit.
REC02b	Der Betrieb von unbemannten Luftfahrzeugen mit einem Gewicht von mehr als 250 g ist nur mit Ausnahmebewilligung erlaubt.	L'exploitation d'aéronefs sans occupants d'un poids supérieur à 250 g n'est autorisée que avec une autorisation exceptionnelle.	L’esercizio di aeromobili senza occupanti di peso superiore a 250 g è consentito solo con permesso d’esenzione.	The operation of unmanned aircraft weighing more than 250 g is only allowed with exemption permit.
REC02c	Der Betrieb von unbemannten Luftfahrzeugen mit einem Gewicht von mehr als 250 g ist ab einer Höhe von 120 m über Grund nur mit Ausnahmebewilligung erlaubt.	L'exploitation d'aéronefs sans occupants d'un poids supérieur à 250 g n'est autorisée que avec une autorisation exceptionnelle à partir d'une hauteur de 120 m audessus du sol.	L’esercizio di aeromobili senza occupanti di peso superiore a 250 g è consentito a partire da un’altezza di 120 m sopra il suolo solo con permesso d’esenzione.	The operation of unmanned aircraft weighing more than 250 g is only permitted from an altitude of 120 m above ground with exemption permit.
REC03	Der Betrieb von unbemannten Luftfahrzeugen ist unter bestimmten Voraussetzungen erlaubt.	L'exploitation d'aéronefs sans occupants est autorisée sous certaines conditions.	L’esercizio di aeromobili senza occupanti è consentito a determinate condizioni.	The operation of unmanned aircraft is permitted under certain conditions.
REC04	Der Betrieb von unbemannten Luftfahrzeugen ist unter bestimmten Voraussetzungen erlaubt.	L'exploitation d'aéronefs sans occupants est autorisée sous certaines conditions.	L’esercizio di aeromobili senza occupanti è consentito a determinate condizioni.	The operation of unmanned aircraft is permitted under certain conditions.
REC05	Der Betrieb von unbemannten Luftfahrzeugen ist zulässig.	L'exploitation d'aéronefs sans occupants est permise.	L’esercizio di aeromobili senza occupanti è consentito.	The operation of unmanned aircraft is permitted.

7.2 Testi dei codici «AddInfoText»

Code	Description (de)	Description (fr)	Description (it)	Description (en)
EXP01	Es werden keine Ausnahmebewilligungen erteilt.	Aucune autorisation exceptionnelle ne sera accordée.	Non saranno concessi permessi d'esenzione.	No exemption permits will be granted.
EXP02	Ausnahmebewilligungen können bei der zuständigen Stelle beantragt werden.	Des autorisations exceptionnelles peuvent être demandées auprès de l'autorité compétente.	I permessi d'esenzione possono essere richiesti all'autorità competente.	Exemption permits may be applied for at the competent authority.
EXP03	Bestimmte Voraussetzungen müssen erfüllt sein (siehe «Hinweis»).	Certaines conditions doivent être remplies (voir «Avertissement»).	Devono essere soddisfatte determinate condizioni (si veda «Avviso»).	Certain conditions must be satisfied (see «Message»).
EXP04	Es müssen die obligatorischen Dienste im Zusammenhang mit dem U-Space Luftraum in Anspruch genommen werden.	Les services obligatoires liés à l'espace aérien U-Space doivent être utilisés.	I servizi obbligatori relativi allo spazio aereo U-Space devono essere utilizzati.	The obligatory services in connection with the U-Space airspace must be used.
EXP05	Es gibt keine Einschränkungen.	Il n'y a pas de restrictions.	Non ci sono restrizioni.	There are no restrictions.

7.3 File modello INTERLIS

Se la versione della definizione del modello INTERLIS qui pubblicata dovesse differire da quella nel Model Repository, fa stato quest'ultima.

«UASGeographicalZone_V2.ili»

```
INTERLIS 2.4;

/** EN: UAS Geographical Zone Data Model
 */
!!@ technicalContact=mailto:gis@bazl.admin.ch
!!@ furtherInformation=https://www.bazl.admin.ch/geoinformation
MODEL UASGeographicalZone_V2 (en)
AT "https://models.geo.admin.ch/BAZL/"
VERSION "2025-03-10"  =
  IMPORTS Text_V2,GeometryCHLV95_V2,InternationalCodes_V2,CatalogueObjects_V2;

  DOMAIN

    /** EN: The value of a code which is a generic placeholder and refers to the
corresponding entry in the multilingual code list for predefined and generic addi-
tional information text elements, which may be used as display texts. Only values
that exist in the code list should be used
     */
    AddInfo = (
      /** EN: Code as placeholder for predefined extended property text 1
       */
      EXP01,
      /** EN: Code as placeholder for predefined extended property text 2
       */
      EXP02,
      /** EN: Code as placeholder for predefined extended property text 3
       */
      EXP03,
      /** EN: Code as placeholder for predefined extended property text 4
       */
      EXP04,
      /** EN: Code as placeholder for predefined extended property text 5
       */
      EXP05,
      /** EN: Code as placeholder for predefined extended property text 6
       */
      EXP06,
      /** EN: Code as placeholder for predefined extended property text 7
       */
      EXP07,
      /** EN: Code as placeholder for predefined extended property text 8
       */
      EXP08,
      /** EN: Code as placeholder for predefined extended property text 9
       */
      EXP09,
      /** EN: Code as placeholder for predefined extended property text 10
       */
      EXP10
    );

    /** EN: The value of a code which is a generic placeholder and refers to the
corresponding entry in the multilingual code list for predefined and generic re-
striction text elements, which may be used as display texts. Only values that exist
in the code list should be used
     */
    Restriction = (
      /** EN: Code as placeholder for predefined restriction condition text 1
       */
      REC01,
```

```
      /** EN: Code as placeholder for predefined restriction condition text 2a
       */
      REC02a,
      /** EN: Code as placeholder for predefined restriction condition text 2b
       */
      REC02b,
      /** EN: Code as placeholder for predefined restriction condition text 2c
       */
      REC02c,
      /** EN: Code as placeholder for predefined restriction condition text 2
       */
      REC02,
      /** EN: Code as placeholder for predefined restriction condition text 3
       */
      REC03,
      /** EN: Code as placeholder for predefined restriction condition text 4
       */
      REC04,
      /** EN: Code as placeholder for predefined restriction condition text 5
       */
      REC05,
      /** EN: Code as placeholder for predefined restriction condition text 6
       */
      REC06,
      /** EN: Code as placeholder for predefined restriction condition text 7
       */
      REC07,
      /** EN: Code as placeholder for predefined restriction condition text 8
       */
      REC08,
      /** EN: Code as placeholder for predefined restriction condition text 9
       */
      REC09,
      /** EN: Code as placeholder for predefined restriction condition text 10
       */
      REC10
    );

  /** EN: Structure containing localised texts (max. 1000 characters)
   */
  STRUCTURE LocalisedTextLong =
    /** EN: Standard language code (ISO639_1) based on the CHBase model convention
     */
    Language : MANDATORY InternationalCodes_V2.LanguageCode_ISO639_1;
    /** EN: Localised text (max. 1000 characters)
     */
    Text : MANDATORY TEXT*1000;
    /** EN: Allowed languages are German, French, Italian and English
     */
    MANDATORY CONSTRAINT ((Language == #de OR Language == #fr) OR Language == #it)
OR Language == #en;
  END LocalisedTextLong;

  /** EN: Structure containing localised texts (max. 200 characters)
   */
  STRUCTURE LocalisedTextShort =
    /** EN: Standard language code (ISO639_1) based on the CHBase model convention
     */
    Language : MANDATORY InternationalCodes_V2.LanguageCode_ISO639_1;
    /** EN: Localised text (max. 200 characters)
     */
    Text : MANDATORY TEXT*200;
    /** EN: Allowed languages are German, French, Italian and English
     */
    MANDATORY CONSTRAINT ((Language == #de OR Language == #fr) OR Language == #it)
OR Language == #en;
  END LocalisedTextShort;
```

```
  /** EN: Structure containing localised Uniform Resource Identifier (URI)
   */
  STRUCTURE LocalisedUri =
    /** EN: Standard language code (ISO639_1) based on the CHBase model convention
     */
    Language : MANDATORY InternationalCodes_V2.LanguageCode_ISO639_1;
    /** EN: Uniform Resource Identifier (URI)
     */
    Text : MANDATORY URI;
    /** EN: Allowed languages are German, French, Italian and English
     */
    MANDATORY CONSTRAINT ((Language == #de OR Language == #fr) OR Language == #it)
OR Language == #en;
  END LocalisedUri;

  /** EN: Structure containing multilingual elements of localised text (max. 1000
characters)
   */
  STRUCTURE MultilingualTextLong =
    /** EN: Multilingual text (max. 1000 characters)
     */
    LocalisedLong : BAG {1..*} OF UASGeographicalZone_V2.LocalisedTextLong;
    /** EN: Uniqueness constraint of multilingual element language
     */
    UNIQUE (LOCAL) LocalisedLong:Language;
  END MultilingualTextLong;

  /** EN: Structure containing multilingual elements of localised text (max. 200
characters)
   */
  STRUCTURE MultilingualTextShort =
    /** EN: Multilingual text (max. 200 characters)
     */
    LocalisedShort : BAG {1..*} OF UASGeographicalZone_V2.LocalisedTextShort;
    /** EN: Uniqueness constraint of multilingual element language
     */
    UNIQUE (LOCAL) LocalisedShort:Language;
  END MultilingualTextShort;

  /** EN: Structure containing multilingual elements of localised Uniform Resource
Identifier (URI)
   */
  STRUCTURE MultilingualUri =
    /** EN: Text as localised Uniform Resource Identifier (URI)
     */
    LocalisedTextUri : BAG {1..*} OF UASGeographicalZone_V2.LocalisedUri;
    /** EN: Uniqueness constraint of multilingual element language
     */
    UNIQUE (LOCAL) LocalisedTextUri:Language;
  END MultilingualUri;

  /** EN: Topic for code list texts
   */
  TOPIC CodelistTexts =
    OID AS INTERLIS.UUIDOID;

    /** EN: Class containing a multilingual code list for predefined and generic ad-
ditional information text elements
     */
    CLASS AddInfoText
    EXTENDS CatalogueObjects_V2.Catalogues.Item =
      /** EN: An extended property code which refers to an enumeration of codes
       */
      Code : MANDATORY UASGeographicalZone_V2.AddInfo;
      /** EN: Multilingual description text (max. 200 characters)
       */
      Description : MANDATORY UASGeographicalZone_V2.MultilingualTextShort;
      /** EN: Uniqueness constraint of the code
```

```
        */
       UNIQUE Code;
     END AddInfoText;

     /** EN: Class containing a multilingual code list for predefined and generic re-
striction text elements
      */
     CLASS RestrictionText
     EXTENDS CatalogueObjects_V2.Catalogues.Item =
       /** EN: A restriction condition code which refers to an enumeration of codes
        */
       Code : MANDATORY UASGeographicalZone_V2.Restriction;
       /** EN: Multilingual description text (max. 200 characters)
        */
       Description : MANDATORY UASGeographicalZone_V2.MultilingualTextShort;
       /** EN: Uniqueness constraint of the code
        */
       UNIQUE Code;
     END RestrictionText;

   END CodelistTexts;

   /** EN: Topic for UAS Geographical Zones
    */
   TOPIC UASZones =
     OID AS INTERLIS.UUIDOID;

     DOMAIN

       /** EN: Defines the role of an authority in relation with the UAS Geographical
Zone, represented by a string with an enumerated list of values
        */
       CodeAuthorityRole = (
         /** EN: The designated authority shall be contacted to get an authorisation
before accessing the UAS Geographical Zone
          */
         AUTHORIZATION,
         /** EN: The designated authority shall be notified of the UAS flight prior
to accessing the UAS Geographical Zone
          */
         NOTIFICATION,
         /** EN: The designated authority is a general purpose point of contact for
the UAS in the zone (out of authorisation and notification)
          */
         INFORMATION
       );

       /** EN: A time identified in relation with an astronomical event, represented
by a string with an enumerated list of values
        */
       CodeDaylightEventType = (
         /** EN: Civil sunrise
          */
         SR,
         /** EN: Civil sunset
          */
         SS
       );

       /** EN: Indicates what type of geometry sub-type is being provided (currently
only circle is supported)
        */
       CodeGeometrySubType = (
         /** EN: Circular geometry
          */
         Circle
       );
```

```
      /** EN: Indicates what type of geometry is being used to describe the feature
       */
      CodeGeometryType = (
        /** EN: A Polygon geometry type
         */
        Polygon,
        /** EN: A Point geometry type
         */
        Point
      );

      /** EN: Indicates the regulation level that establishes the UAS Geographical
Zone, represented by a string with an enumerated list of values
       */
      CodeRegulationLevel = (
        /** EN: The UAS Geographical Zone is established by a cantonal regulation
         */
        CANTONAL,
        /** EN: The UAS Geographical Zone is established by a federal regulation
         */
        FEDERAL
      );

      /** EN: A coded value that indicates a vertical reference system, represented
by a string with an enumerated list of values
       */
      CodeVerticalReferenceType = (
        /** EN: Height above ground/surface level
         */
        AGL,
        /** EN: Altitude above Mean Sea Level as defined by EGM-96 or a geoid model
specified in the dataset metadata
         */
        AMSL,
        /** EN: Height above the WGS84 ellipsoid
         */
        WGS84
      );

      /** EN: A coded value indicating a day of the week, represented by a string
with an enumerated list of values
       */
      CodeWeekDayType = (
        /** EN: Monday
         */
        MON,
        /** EN: Tuesday
         */
        TUE,
        /** EN: Wednesday
         */
        WED,
        /** EN: Thursday
         */
        THU,
        /** EN: Friday
         */
        FRI,
        /** EN: Saturday
         */
        SAT,
        /** EN: Sunday
         */
        SUN,
        /** EN: Any day of the week
         */
        Any
      );
```

```
      /** EN: A coded value that indicates a choice between a positive (yes) and a
negative (no) applicability, represented by a string with an enumerated list of val-
ues
       */
      CodeYesNoType = (
        /** EN: The situation is true, according to the property default definition
         */
        Yes,
        /** EN: The situation is not true
         */
        No
      );

      /** EN: A coded identifier of an UAS Geographical Zone
       */
      CodeZoneIdentifierType = TEXT*7;

      /** EN: A coded indication of a reason that justifies the existence of an UAS
Geographical Zone, represented by a string with an enumerated list of values
       */
      CodeZoneReasonType = (
        /** EN: Due to the presence of air traffic
         */
        AIR_TRAFFIC,
        /** EN: Due to the presence of a sensitive site, in the vicinity of which
the presence of drones could be considered a potential threat
         */
        SENSITIVE,
        /** EN: Due to the presence of a sensitive site for which the presence of
drones could rise privacy concerns
         */
        PRIVACY,
        /** EN: Due to the presence of a significantly populated area
         */
        POPULATION,
        /** EN: Due to the presence of a wildlife/nature sanctuary or another area
with sensitive nature/fauna
         */
        NATURE,
        /** EN: Due to noise abatement regulations
         */
        NOISE,
        /** EN: Due to activity related to a situation that requires urgent inter-
vention (such as an accident)
         */
        EMERGENCY,
        /** EN: Due to the application of a dynamic airspace reconfiguration in a U-
space volume, temporarily segregating the zone for UAS operations
         */
        DAR
      );

      /** EN: An indicator of the restriction level for the zone, represented by a
string with an enumerated list of values
       */
      CodeZoneType = (
        /** EN: Indicates a zone subject to the requirements of Regulation EU
664/2021
         */
        USPACE,
        /** EN: Indicates that the flight of UAS is prohibited during the applica-
bility time
         */
        PROHIBITED,
        /** EN: Indicates that the flight of UAS is subject to explicit authoriza-
tion requirements during the time of applicability. Note that one Authority contact
with the role Authorization should be provided in this case
```

```
         */
        REQ_AUTHORIZATION,
        /** EN: Indicates that access in the UAS Geographical Zone is allowed only
to operators fulfilling a special condition, which is defined as a logical expres-
sion
         */
        CONDITIONAL,
        /** EN: Indicates that the zone may be used during the applicability time
without any special permissions or restrictions
         */
        NO_RESTRICTION
      );

      /** EN: Allows an indication that the definition of an UAS Geographical Zone
is specifically customized for a particular UAS or operator
       */
      CodeZoneVariant = (
        /** EN: The Zone is provided with its common definition, valid for any UAS
and operator
         */
        COMMON
      );

      /** EN: A date and time instant, represented as a string specified by RFC 3339
in the local time
       */
      DateTimeType = FORMAT INTERLIS.XMLDateTime "1900-01-01T00:00:00.000" .. "2099-
12-31T23:59:59.000";

      /** EN: A free text with a maximum length of 200 characters
       */
      TextShortType = TEXT*200;

      /** EN: A period of time represented as a string formatted according to the
ISO 8601 rules
       */
      TimeInterval = TEXT*8;

      /** EN: A time instant represented by a string according to the ISO 8601
standard and in the local time
       */
      TimeType = FORMAT INTERLIS.XMLTime "00:00:00.000" .. "23:59:59.999";

      /** EN: Defines units of measurement used for distances
       */
      UomDistance = (
        /** EN: Metres
         */
        m
      );

      /** EN: A string of characters that complies with the Uniform Resource Name
(URN) scheme as specified in the RFC 2141
       */
      URNType = (
        /** EN: The geoid model used in Switzerland
         */
        CHGeo2004
      );

    /** EN: A GeoJSON feature representing an UAS Geographical Zone
     */
    CLASS Feature =
    END Feature;

    /** EN: A relevant authority that is in charge for authorising, being notified
or providing information for UAS operations in the UAS Geographical Zone
     */
```

```
    CLASS Authority =
      /** EN: The official multilingual name of a public or private authority
       */
      authorityName : MANDATORY UASGeographicalZone_V2.MultilingualTextShort;
      /** EN: The multilingual name of a specific department or service within the
organisation
       */
      service : UASGeographicalZone_V2.MultilingualTextShort;
      /** EN: The multilingual name or role of a specific person that needs to be
contacted within the organisation
       */
      contactName : UASGeographicalZone_V2.MultilingualTextShort;
      /** EN: The multilingual URL of the public internet site through which the or-
ganisation may be contacted
       */
      siteURL : MANDATORY UASGeographicalZone_V2.MultilingualUri;
      /** EN: The e-mail address by which the organisation may be contacted
       */
      email : TextShortType;
      /** EN: A phone number at which the organisation may be contacted
       */
      phone : TextShortType;
    END Authority;

    /** EN: Specifies a daily applicability schedule of the zone, within the time
when the area exists according to the TimePeriod information
     */
    CLASS DailyPeriod =
      /** EN: The day(s) of the week
       */
      day : BAG {1..6} OF CodeWeekDayType;
      /** EN: The daily start time, if startEvent is not specified
       */
      startTime : TimeType;
      /** EN: The event triggering the start of the applicable time period, if
startTime is not specified
       */
      startEvent : CodeDaylightEventType;
      /** EN: The daily end time, if endEvent is not specified
       */
      endTime : TimeType;
      /** EN: The event triggering the end of the applicable time period, if endTime
is not specified
       */
      endEvent : CodeDaylightEventType;
      /** EN: One of startTime or startEvent must be defined
       */
      MANDATORY CONSTRAINT DEFINED (startTime) OR DEFINED (startEvent);
      /** EN: If startTime is defined, startEvent must not be defined
       */
      MANDATORY CONSTRAINT NOT (DEFINED (startTime)) OR NOT (DEFINED (startEvent));
      /** EN: If startEvent is defined, startTime must not be defined
       */
      MANDATORY CONSTRAINT NOT (DEFINED (startEvent)) OR NOT (DEFINED (startTime));
      /** EN: One of endTime or endEvent must be defined
       */
      MANDATORY CONSTRAINT DEFINED (endTime) OR DEFINED (endEvent);
      /** EN: If endTime is defined, endEvent must not be defined
       */
      MANDATORY CONSTRAINT NOT (DEFINED (endTime)) OR NOT (DEFINED (endEvent));
      /** EN: If endEvent is defined, endTime must not be defined
       */
      MANDATORY CONSTRAINT NOT (DEFINED (endEvent)) OR NOT (DEFINED (endTime));
    END DailyPeriod;

    /** EN: Global information that qualifies and constrains the usage of the data
contained in the associated data set
     */
```

```
    CLASS DatasetMetadata =
      /** EN: The date and time starting from when the information contained in the
data set is applicable, which means in particular the date of publication
       */
      validFrom : MANDATORY DateTimeType;
      /** EN: The date and time until when the information contained in the data set
is applicable
       */
      validTo : DateTimeType;
      /** EN: Multilingual information (such as name, contact, details) of the or-
ganization providing the data set
       */
      provider : MANDATORY UASGeographicalZone_V2.MultilingualTextShort;
      /** EN: The date and time when the data set was issued
       */
      issued : MANDATORY DateTimeType;
      /** EN: Multilingual textual description of the data set content, extent, pur-
pose, etc.
       */
      description : UASGeographicalZone_V2.MultilingualTextShort;
      /** EN: Identification of another geoid model than EGM96 which is used for the
vertical limits that are expressed with reference to the Mean Sea Level
       */
      otherGeoid : URNType;
      /** EN: Multilingual constraints or caution reasons related to the use of the
data contained in the data set, in particular with regard to the quality of the data
       */
      technicalLimitation : UASGeographicalZone_V2.MultilingualTextShort;
    END DatasetMetadata;

    /** EN: A feature collection class containing zero or more features representing
UAS Geographical Zones
     */
    CLASS FeatureCollection =
      /** EN: A free text name to identify the UAS Geographical Zone data set
       */
      collectionName : MANDATORY TextShortType;
      /** EN: Rectangular surface that comprises the entire area
       */
      bbox : TEXT*150;
      /** EN: The attribute collectionName must be unique
       */
      UNIQUE collectionName;
    END FeatureCollection;

    /** EN: A GeoJSON geometry as defined in the RFC 7946 standard, including addi-
tional foreign members based on the LayeredGeoJSON extension
     */
    CLASS Geometry =
      /** EN: Type of geometry being used to describe the feature
       */
      geometryType : MANDATORY CodeGeometryType;
      /** EN: A point shape using the CH1903+ coordinate reference system
(EPSG:2056)
       */
      coordinatesPoint : GeometryCHLV95_V2.Coord2;
      /** EN: A polygonal shape using the CH1903+ coordinate reference system
(EPSG:2056). There must be a single exterior and no circles. Interior holes are al-
lowed
       */
      coordinatesPolygon : SURFACE WITH (STRAIGHTS) VERTEX GeometryCHLV95_V2.Coord2
WITHOUT OVERLAPS>0.05;
      /** EN: If geometryType==Point, coordinatesPoint has to be defined
       */
      MANDATORY CONSTRAINT NOT ((geometryType==#Point)) OR DEFINED (coordinate-
sPoint);
      /** EN: If geometryType==Polygon, coordinatesPolygon has to be defined
       */
```

```
      MANDATORY CONSTRAINT NOT ((geometryType==#Polygon)) OR DEFINED (coordinate-
sPolygon);
      /** EN: If coordinatesPoint is defined, coordinatesPolygon must not be defined
       */
      MANDATORY CONSTRAINT NOT (DEFINED (coordinatesPoint)) OR NOT (DEFINED (coordi-
natesPolygon));
      /** EN: If coordinatesPolygon is defined, coordinatesPoint must not be defined
       */
      MANDATORY CONSTRAINT NOT (DEFINED (coordinatesPolygon)) OR NOT (DEFINED (coor-
dinatesPoint));
    END Geometry;

    /** EN: An extension to GeoJSON which provides the possibility to specify a hor-
izontal "circle" extent for a point geometry
     */
    CLASS HorizontalExtent =
      /** EN: Fixed value for circle
       */
      subType : MANDATORY CodeGeometrySubType;
      /** EN: Distance, in metres, from the associated point along the surface of
the Earth that this geometry extends
       */
      radius : MANDATORY 0 .. 999999 [INTERLIS.m];
    END HorizontalExtent;

    /** EN: Defines, if applicable, the limited applicability dates and time of the
zone, including an eventual daily schedule
     */
    CLASS TimePeriod =
      /** EN: The date and time when the UAS Geographical Zone starts to exist. When
not provided, it means that the zone is permanent and such zone might still have a
schedule specified. It can be also used in order to specify that a zone becomes ap-
plicable after the start of validity
       */
      startDateTime : DateTimeType;
      /** EN: The date and time when the UAS Geographical Zone ceases to exist. When
not provided, it means that the zone is permanent and such zone might still have a
schedule specified
       */
      endDateTime : DateTimeType;
      /** EN: Special marking of annually recurring temporary zones, that is used
only in the context of Swiss UAS Geographical Zones
       */
      annually : MANDATORY CodeYesNoType;
      /** EN: It is forbidden to provide the attribute endDateTime without the at-
tribute startDateTime
       */
      MANDATORY CONSTRAINT NOT (DEFINED (endDateTime)) OR DEFINED (startDateTime);
      /** EN: The attribute annually==Yes can only occur when startDateTime is de-
fined
       */
      MANDATORY CONSTRAINT NOT ((annually==#Yes)) OR DEFINED (startDateTime);
      /** EN: The attribute annually==Yes can only occur when endDateTime is defined
       */
      MANDATORY CONSTRAINT NOT ((annually==#Yes)) OR DEFINED (endDateTime);
      /** EN: When both startDateTime and endDateTime are provided, endDateTime must
be later than startDateTime
       */
      MANDATORY CONSTRAINT NOT (DEFINED (startDateTime) AND DEFINED (endDateTime))
OR (startDateTime < endDateTime);
    END TimePeriod;

    /** EN: A specific version of an airspace of defined dimensions, above the land
areas or territorial waters of a state, within which a particular restriction or
condition for UAS flights applies
     */
    CLASS UASZoneVersion =
```

```
      /** EN: A string of characters that uniquely identifies the UAS Geographical
Zone within the State/Territory identified by the country member
       */
      identifier : MANDATORY CodeZoneIdentifierType;
      /** EN: The State that has the authority to declare the zone. A 3 letter iden-
tifier using the ISO 3166-1 alpha-3 standard (CHE for Switzerland
       */
      country : MANDATORY InternationalCodes_V2.CountryCode_ISO3166_1;
      /** EN: A multilingual text name by which the zone may be known by the public
or by the UAS community. Important: Languages DE, FR, IT and EN have to be provided.
Use the main language value as default for the other languages if no specific value
in a certain language exists. The permissible length is limited to 200 characters
       */
      name : MANDATORY UASGeographicalZone_V2.MultilingualTextShort;
      /** EN: An indication if flying in the zone is subject to one of the values in
CodeZoneType
       */
      type : MANDATORY CodeZoneType;
      /** EN: An indication whether the zone is provided with its common definition
(whereas a customized definition for a particular user is not applicable herein)
       */
      variant : MANDATORY CodeZoneVariant;
      /** EN: An indication of the conditions under which the zone can be used
       */
      restrictionConditions : MANDATORY UASGeographicalZone_V2.Restriction;
      /** EN: Identifies the canton where the UAS Geographical Zone is located.
0=Switzerland; 1 to 26 = canton number from Federal Statistical Office; 27=Liechten-
stein
       */
      region : MANDATORY 0 .. 27;
      /** EN: A coded indication for the reason that led to the establishment of the
zone
       */
      reason : MANDATORY CodeZoneReasonType;
      /** EN: Indicates whether the UAS Geographical Zone underlies to a cantonal or
a federal regulation
       */
      regulationLevel : MANDATORY CodeRegulationLevel;
      /** EN: Indicates that exemptions from the national or European regulations
are allowed in the UAS Geographical Zone, that will be detailed via the message mem-
ber
       */
      regulationExemption : CodeYesNoType;
      /** EN: Multilingual message to be displayed to the user of the zone, typi-
cally on the RPS for the Remote Pilot, to make him/her aware about specific infor-
mation associated with the zone
       */
      message : UASGeographicalZone_V2.MultilingualTextLong;
      /** EN: This is a placeholder, allowing data providers to customize the imple-
mentation and provide additional information. In Switzerland, this is used to inform
about exemption permits or to provide other relevant indications
       */
      extendedProperties : MANDATORY UASGeographicalZone_V2.AddInfo;
      /** EN: PROHIBITED (type) geographical zones must be associated with REC01
(restrictionConditions) and EXP01 (extendedProperties)
       */
      MANDATORY CONSTRAINT NOT((type == #PROHIBITED)) OR (restrictionConditions ==
#REC01) AND (extendedProperties == #EXP01);
      /** EN: REQ_AUTHORIZATION (type) geographical zones must be associated with
either REC02a or REC02b or REC02c (restrictionConditions) and EXP02 (extendedProper-
ties)
       */
      MANDATORY CONSTRAINT NOT((type == #REQ_AUTHORIZATION)) OR (restrictionCondi-
tions == #REC02a OR restrictionConditions == #REC02b OR restrictionConditions ==
#REC02c) AND (extendedProperties == #EXP02);
      /** EN: CONDITIONAL (type) geographical zones must be associated with REC03
(restrictionConditions) and EXP03 (extendedProperties)
       */
```

```
      MANDATORY CONSTRAINT NOT((type == #CONDITIONAL)) OR (restrictionConditions ==
#REC03) AND (extendedProperties == #EXP03);
      /** EN: USPACE (type) geographical zones must be associated with REC04 (re-
strictionConditions) and EXP04 (extendedProperties)
       */
      MANDATORY CONSTRAINT NOT((type == #USPACE)) OR (restrictionConditions ==
#REC04) AND (extendedProperties == #EXP04);
      /** EN: NO_RESTRICTION (type) geographical zones must be associated with REC05
(restrictionConditions) and EXP05 (extendedProperties)
       */
      MANDATORY CONSTRAINT NOT((type == #NO_RESTRICTION)) OR (restrictionConditions
== #REC05) AND (extendedProperties == #EXP05);
    END UASZoneVersion;

    /** EN: An extension to GeoJSON which provides a vertical layer extent to all
standard geometries
     */
    CLASS VerticalLayer =
      /** EN: The value of the upper limit of the UAS Geographical Zone expressed in
a unit of measurement specified in uom, in relation with the vertical datum speci-
fied in the upperReference member
       */
      upper : MANDATORY 0 .. 99999;
      /** EN: The vertical reference for the upper limit of the UAS Geographical
Zone
       */
      upperReference : MANDATORY CodeVerticalReferenceType;
      /** EN: The value of the lower limit of the UAS Geographical Zone expressed in
a unit of measurement specified in uom, in relation with the vertical datum speci-
fied in the lowerReference member
       */
      lower : MANDATORY 0 .. 99999;
      /** EN: The vertical reference for the lower limit of the UAS Geographical
Zone
       */
      lowerReference : MANDATORY CodeVerticalReferenceType;
      /** EN: The unit of measurement in which the upper and lower values are ex-
pressed. Only metres are allowed
       */
      uom : MANDATORY UomDistance;
      /** EN: The upper limit must be greater than the lower
       */
      MANDATORY CONSTRAINT upper > lower;
    END VerticalLayer;

    /** EN: Information that qualifies and provides traceability for the zone opera-
tional data, which is not included in the UAS Geographical Zone data provided to the
users
     */
    CLASS Metadata =
      /** EN: Indicates when the zone was initially created
       */
      creationDateTime : MANDATORY DateTimeType;
      /** EN: Indicates when the characteristics of the zone have been last time up-
dated
       */
      updateDateTime : MANDATORY DateTimeType;
      /** EN: Identifies the originator of the UAS Geographical Zone
       */
      originator : MANDATORY TextShortType;
    END Metadata;

    /** EN: Defines a relevant authority that is in charge for authorizing, being
notified or providing information for UAS operations in the UAS Geographical Zone
     */
    ASSOCIATION AuthorityRequirements =
      /** EN: Association
       */
```

```
      zoneAuthority -- {1..*} Authority;
      /** EN: Composition
       */
      requiresToContact -<#> {1} UASZoneVersion;
      /** EN: The role of the Authority in relation with the zone
       */
      purpose : MANDATORY CodeAuthorityRole;
      /** EN: The minimal time interval required between notification or authoriza-
tion request and starting to operate in the zone
       */
      intervalBefore : MANDATORY TimeInterval;
      /** EN: UAS Geographical Zones of the type PROHIBITED must be associated with
an INFORMATION authority role (multi-class constraint)
       */
      MANDATORY CONSTRAINT NOT((requiresToContact->type == #PROHIBITED)) OR (purpose
== #INFORMATION);
      /** EN: UAS Geographical Zones of the type NO_RESTRICTION cannot be associated
with an AUTHORIZATION authority role (multi-class constraint)
       */
      MANDATORY CONSTRAINT NOT((requiresToContact->type == #NO_RESTRICTION)) OR
(purpose != #AUTHORIZATION);
      /** EN: UAS Geographical Zones of the type REQ_AUTHORIZATION must be associ-
ated with an AUTHORIZATION authority role (multi-class constraint)
       */
      MANDATORY CONSTRAINT NOT((requiresToContact->type == #REQ_AUTHORIZATION)) OR
(purpose == #AUTHORIZATION);
      /** EN: UAS Geographical Zones of the type USPACE must be associated with an
INFORMATION authority role (multi-class constraint)
       */
      MANDATORY CONSTRAINT NOT((requiresToContact->type == #USPACE)) OR (purpose ==
#INFORMATION);

       !! This constraint has to be inserted manually in the ili file (not with
UML/INTERLIS-Editor)
       !!===============================================
       /** EN: intervalBefore must be provided in the format PnnDTnnH
    */
       MANDATORY CONSTRAINT Checkinterval : Text_V2.matches(intervalBefore,
"^P{1}[0-9]{2}DT{1}[0-9]{2}H{1}$");
       !!===============================================

    END AuthorityRequirements;

    /** EN: Association HorizontalExtent with Geometry
     */
    ASSOCIATION Extent_rel =
      /** EN: Association
       */
      extent -- {0..1} HorizontalExtent;
      /** EN: Composition
       */
      hasExtent -<#> {1} Geometry;
    END Extent_rel;

    /** EN: Association Feature with FeatureCollection
     */
    ASSOCIATION Features_rel =
      /** EN: Association
       */
      features -- {0..*} Feature;
      /** EN: Composition
       */
      hasFeatures -<#> {1} FeatureCollection;
    END Features_rel;

    /** EN: Association Geometry with Geometry (for vertically stacked geometries)
     */
    ASSOCIATION Geometries_rel =
```

```
    /** EN: Association
     */
    geometries -- {0..*} Geometry;
    /** EN: Composition
     */
    hasGeometries -<#> {1} Geometry;
  END Geometries_rel;

  /** EN: Association Geometry with Feature
   */
  ASSOCIATION Geometry_rel =
    /** EN: Association
     */
    geometry -- {1} Geometry;
    /** EN: Composition
     */
    hasGeometry -<#> {1} Feature;
  END Geometry_rel;

  /** EN: Association VerticalLayer with Geometry
   */
  ASSOCIATION Layer_rel =
    /** EN: Association
     */
    layer -- {1} VerticalLayer;
    /** EN: Composition
     */
    hasLayer -<#> {1} Geometry;
  END Layer_rel;

  /** EN: Association TimePeriod with UASZoneVersion
   */
  ASSOCIATION LimitedApplicability_rel =
    /** EN: Association
     */
    limitedApplicability -- {0..*} TimePeriod;
    /** EN: Composition
     */
    isApplicable -<#> {1} UASZoneVersion;
  END LimitedApplicability_rel;

  /** EN: Association DatasetMetadata with FeatureCollection
   */
  ASSOCIATION Metadata_rel =
    /** EN: Association
     */
    metadata -- {1} DatasetMetadata;
    /** EN: Composition
     */
    hasMetadata -<#> {1} FeatureCollection;
  END Metadata_rel;

  /** EN: Association UASZoneVersion with Feature
   */
  ASSOCIATION Properties_rel =
    /** EN: Association
     */
    properties -- {1} UASZoneVersion;
    /** EN: Composition
     */
    hasProperties -<#> {1} Feature;
  END Properties_rel;

  /** EN: Association DailyPeriod with TimePeriod
   */
  ASSOCIATION Schedule_rel =
    /** EN: Association
     */
```

```
      schedule -- {0..*} DailyPeriod;
      /** EN: Composition
       */
      hasDailySchedule -<#> {1} TimePeriod;
    END Schedule_rel;

    /** EN: Association Metadata with UASZoneVersion
     */
    ASSOCIATION dataSource_rel =
      /** EN: Association
       */
      dataSource -- {0..1} Metadata;
      /** EN: Composition
       */
      hasDataSource -<#> {1} UASZoneVersion;
    END dataSource_rel;

       !! This constraint has to be inserted manually in the ili file (not with
UML/INTERLIS-Editor)
       !!=============================================
       /** EN: validFrom must precede startDateTime when startDateTime is defined
(multi-class constraint)
        */
       CONSTRAINTS OF TimePeriod =
              MANDATORY CONSTRAINT
                     isApplicable -> hasProperties -> hasFeatures -> metadata ->
validFrom < startDateTime AND DEFINED (startDateTime);
       END;
       !!=============================================

  END UASZones;

END UASGeographicalZone_V2.
```

7.4 Vincoli del modello

Classe	Descrizione Constraint	INTERLIS Constraint
AuthorityRequire-ments	intervalBefore must be provided in the format PnnDTnnH.	`MANDATORY CONSTRAINT Checkin-terval : Text_V2.matches(in-tervalBefore, "^P{1}[0-9]{2}DT{1}[0-9]{2}H{1}$");`
AuthorityRequire-ments / UASZone-Version	UAS Geographical Zones of the type PROHIBITED must be associated with an INFORMATION authority role (multi-class constraint).	`MANDATORY CONSTRAINT NOT((re-quiresToContact->type == #PROHIBITED)) OR (purpose == #INFORMATION);`
AuthorityRequire-ments / UASZone-Version	UAS Geographical Zones of the type NO_RESTRICTION cannot be asso-ciated with an AUTHORIZATION au-thority role (multi-class constraint).	`MANDATORY CONSTRAINT NOT((re-quiresToContact->type == #NO_RESTRICTION)) OR (purpose != #AUTHORIZATION);`
AuthorityRequire-ments / UASZone-Version	UAS Geographical Zones of the type REQ_AUTHORIZATION must be as-sociated with an AUTHORIZATION authority role (multi-class constraint)	`MANDATORY CONSTRAINT NOT((re-quiresToContact->type == #REQ_AUTHORIZATION)) OR (pur-pose == #AUTHORIZATION);`
AuthorityRequire-ments / UASZone-Version	UAS Geographical Zones of the type USPACE must be associated with an INFORMATION authority role (multi-class constraint).	`MANDATORY CONSTRAINT NOT((re-quiresToContact->type == #USPACE)) OR (purpose == #IN-FORMATION);`
DailyPeriod	One of startTime or startEvent must be defined.	`MANDATORY CONSTRAINT DEFINED (startTime) OR DEFINED (startEvent);`
DailyPeriod	One of endTime or endEvent must be defined.	`MANDATORY CONSTRAINT DEFINED (endTime) OR DEFINED (endEvent);`
DailyPeriod	If startTime is defined, startEvent must not be defined.	`MANDATORY CONSTRAINT NOT (DE-FINED (startTime)) OR NOT (DEFINED (startEvent));`
DailyPeriod	If startEvent is defined, startTime must not be defined.	`MANDATORY CONSTRAINT NOT (DE-FINED (startEvent)) OR NOT (DEFINED (startTime));`
DailyPeriod	If endTime is defined, endEvent must not be defined.	`MANDATORY CONSTRAINT NOT (DE-FINED (endTime)) OR NOT (DE-FINED (endEvent));`
DailyPeriod	If endEvent is defined, endTime must not be defined.	`MANDATORY CONSTRAINT NOT (DE-FINED (endEvent)) OR NOT (DE-FINED (endTime));`
FeatureCollection	The attribute collectionName must be unique.	`UNIQUE collectionName;`
Geometry	If geometryType==Point, coordinate-sPoint has to be defined.	`MANDATORY CONSTRAINT NOT ((geometryType==#Point)) OR DEFINED (coordinatesPoint);`
Geometry	If geometryType==Polygon, coordi-natesPolygon has to be defined.	`MANDATORY CONSTRAINT NOT ((geometryType==#Polygon)) OR DEFINED (coordinatesPolygon);`
Geometry	If coordinatesPoint is defined, coordi-natesPolygon must not be defined.	`MANDATORY CONSTRAINT NOT (DE-FINED (coordinatesPoint)) OR NOT (DEFINED (coordinate-sPolygon));`
Geometry	If coordinatesPolygon is defined, co-ordinatesPoint must not be defined.	`MANDATORY CONSTRAINT NOT (DE-FINED (coordinatesPolygon)) OR NOT (DEFINED (coordinate-sPoint));`
TimePeriod	It is forbidden to have the attribute endDateTime without the attribute startDateTime.	`MANDATORY CONSTRAINT NOT (DE-FINED (endDateTime)) OR DE-FINED (startDateTime);`
TimePeriod	The attribute annually=Yes can only occur when startDateTime is defined.	`MANDATORY CONSTRAINT NOT ((annually==#Yes)) OR DEFINED (startDateTime);`

TimePeriod	The attribute annually=Yes can only occur when endDateTime is defined.	`MANDATORY CONSTRAINT NOT ((annually==#Yes)) OR DEFINED (endDateTime);`
TimePeriod	When both startDateTime and endDateTime are provided, endDateTime must be later than startDateTime.	`MANDATORY CONSTRAINT NOT (DE-FINED (startDateTime) AND DE-FINED (endDateTime)) OR (startDateTime < endDateTime);`
TimePeriod/Dataset-Metadata	validFrom must precede startDateTime when startDateTime is defined (multi-class constraint).	`CONSTRAINTS OF TimePeriod = MANDATORY CONSTRAINT isApplicable -> hasProperties -> hasFeatures -> metadata -> validFrom < startDateTime AND DEFINED (startDateTime);`
UASZoneVersion	PROHIBITED (type) geographical zones must be associated with REC01 (restrictionConditions) and EXP01 (extendedProperties).	`MANDATORY CONSTRAINT NOT((type == #PROHIBITED)) OR (restrictionConditions == #REC01) AND (extendedProper-ties == #EXP01);`
UASZoneVersion	REQ_AUTHORIZATION (type) geographical zones must be associated with either REC02a or REC02b or REC02c (restrictionConditions) and EXP02 (extendedProperties).	`MANDATORY CONSTRAINT NOT((type == #REQ_AUTHORIZA-TION)) OR (restrictionCondi-tions == #REC02a OR re-strictionConditions == #REC02b OR restrictionCondi-tions == #REC02c) AND (ex-tendedProperties == #EXP02);`
UASZoneVersion	CONDITIONAL (type) geographical zones must be associated with REC03 (restrictionConditions) and EXP03 (extendedProperties).	`MANDATORY CONSTRAINT NOT((type == #CONDITIONAL)) OR (restrictionConditions == #REC03) AND (extendedProper-ties == #EXP03);`
UASZoneVersion	USPACE (type) geographical zones must be associated with REC04 (re-strictionConditions) and EXP04 (ex-tendedProperties).	`MANDATORY CONSTRAINT NOT((type == #USPACE)) OR (restrictionConditions == #REC04) AND (extendedProper-ties == #EXP04);`
UASZoneVersion	NO_RESTRICTION (type) geograph-ical zones must be associated with REC05 (restrictionConditions) and EXP05 (extendedProperties).	`MANDATORY CONSTRAINT NOT((type == #NO_RE-STRICTION)) OR (restriction-Conditions == #REC05) AND (extendedProperties == #EXP05);`
VerticalLayer	The upper limit must be greater than the lower limit.	`MANDATORY CONSTRAINT upper > lower;`
MultilingualTextLong (Structure)	Uniqueness constraint of multilingual element language.	`UNIQUE (LOCAL) Localised-Long:Language;`
MultilingualTextShort (Structure)	Uniqueness constraint of multilingual element language.	`UNIQUE (LOCAL) Local-isedShort:Language;`
MultilingualUri (Structure)	Uniqueness constraint of multilingual element language.	`UNIQUE (LOCAL) LocalisedTex-tUri:Language;`
LocalisedTextLong (Structure) + Local-isedTextShort (Struc-ture) + LocalisedUri (Structure)	Allowed languages are German, French, Italian and English.	`MANDATORY CONSTRAINT ((Lan-guage == #de OR Language == #fr) OR Language == #it) OR Language == #en;`

7.5 Elementi del modello non utilizzati

Tipi di dati / Intervalli di valori secondo il modello «UAS Geographical Zone» [1] non utilizzati

BoundingBox	
Rectangular surface described by 4 coordinate points that comprises the entire area.	
Tipo	**Descrizione**
array	

ConditionExpressionType	
A coded expression that provides information about what is authorized/forbidden in a zone that has conditional access.	
Tipo	**Descrizione**
TEXT*10000	A string of maximum 10'000 characters.

GeoJSONCoordinates	
Tipo	**Descrizione**
GeoJSON coordinates	

GeoJSONGeometryType	
Type of geometry being used to describe the feature.	
Tipo	**Descrizione**

TextLongType	
A free text with a maximum length of 1000 characters.	
Tipo	**Descrizione**
TEXT*1000	A string of maximum 1000 characters.

URNType	
This data type is string of characters that complies with the Uniform Resource Name (URN) scheme as specified in the RFC 2141.	
Tipo	**Descrizione**
string	String of characters as specified in RFC 2141.

CodeCountryISOType	
This data type is a 3-letter identifier of a country or territory using the ISO 3166-1 alpha-3 standard.	
Valore	**Descrizione**

CHE	A 3 letter identifier.

CodeDaylightEventType	
A time identified in relation with an astronomical event, such as sunrise/sunset, represented by a string with an enumerated list of values.	
Valore	**Descrizione**
BMCT	Beginning of morning civil twilight, which is the time when the centre of the sun's disc is 6 degrees below the horizon.
EECT	End of evening civil twilight, which is the time when the centre of the sun's disc is 6 degree below the horizon.

CodeZoneReasonType	
A coded indication of a reason that justifies the existence of a UAS Geographical Zone.	
Valore	**Descrizione**
OTHER	Due to another reason, which may be specified in the otherReasonInfo property.

CodeZoneVariant	
Allows an indication that the definition of an UAS Geographical Zone is specifically customised for a particular UAS or operator.	
Valore	**Descrizione**
CUSTOMIZED	The Zone is provided with a customised definition, for a particular UAS or operator. This is a design provision that could be used for example to provide waivers to specific users with restrictions removed on given ones for example. This information enables them to identify it is not the common version which has been transferred.

UomDistance	
Defines units of measurement used for distances.	
Valore	**Descrizione**
ft	Feet

Attributi delle classi secondo il modello «UAS Geographical Zone» [1] non utilizzati

UASZoneVersion

Attributo	Molteplicità	Tipo di dati (intervallo di valori)	Descrizione

otherReasonInfo	0..*	TextShortType	Free text description of the reason that led to the establishment of the zone, when OTHER is included in reasons.

Geometry

Attributo	**Molte-plicità**	**Tipo di dati (intervallo di valori)**	**Descrizione**
coordinates	1	GeoJSONCoor-dinates	