

WMG Two-Level Scenario Description Language
Syntax

This document is meant to communicate the grammar and syntax of WMG Two-Level Scenario Description Language.

0.1 Notation Used

We use the following notation to express the syntax of SDL.

- Keywords are written in bold and are case-sensitive.
- The symbol ‘|’ represents a grammatical OR.
- Square Brackets ‘[’ and ‘]’ represent that the contained expression may or may not be present.
- Braces ‘{’ and ‘}’ represent zero or more repetitions of the contained expression.
- Parenthesis ‘(’ and ‘)’ contain in-line expressions or rules.
- A series ‘...’ may be replaced by the most logically consistent pattern. For instance when used in as part of “a | b | ... | z”, the most logically consistent pattern would be the series of all lower case letters in the English alphabet.
- A syntactic symbol may be followed by a comment that restrains the use of the symbol to the context mentioned in the comment. A comment in the syntax is surrounded by the symbol %.
- Symbols that are part of the language used to describe the syntax may also be part of the grammar, and if so are specified in single quotes ‘...’.

0.2 Terminal Symbols

We use the following terminal symbol names in the syntax of SDL.

- **STRING**: A series of letters, numbers and spaces enclosed within single quotes.
- **INT**: A number without a decimal possible prefixed by the negative sign ‘-’.
- **DOUBLE**: A number with a decimal possible prefixed by the negative sign ‘-’.
- A comment in SDL is prefixed by a ‘#’. Comments terminate with the end-of-document/new-line/carriage-return.
- **ROAD_ID**: The letter **R** followed by an integer.
- **LANE_ID**: The letter **L** or the letter **P** followed by an integer.
- **ID**: A series of letters and numbers without intermediate spaces. An ID cannot be a **ROAD_ID** or **LANE_ID**.

Chapter 1

Natural Language SDL Level-1 Syntax

1.1 Starting Rules

SDL	→	HEADER ENVIRONMENT_DESCRIPTION SCENERY_DESCRIPTION DYNAMIC_DESCRIPTION
HEADER	→	VERSION [AUTHOR]
VERSION	→	VERSION ':' INT.INT
AUTHOR	→	AUTHOR ':' STRING

1.2 Environment

ENVIRONMENT_DESCRIPTION	→	During the TIME_OF_DAY , there is a LIGHT_CONDITION [, (CLOUD_CONDITION STRING)] sky (, PREPOSITION? ADDITIONAL_ENV_FEATURES)* (and PREPOSITION? ADDITIONAL_ENV_FEATURES).
TIME_OF_DAY	→	day night
LIGHT_CONDITION	→	light bright dark
CLOUD_CONDITION	→	lightly cloud covered partly cloudy cloudy cloud covered overcast clear
ADDITIONAL_ENV_FEATURES	→	PARTICULATES_TYPE SNOWFALL_DESCRIPTION WIND_DESCRIPTION RAINFALL_DESCRIPTION
PREPOSITION	→	with
PARTICULATE_TYPE	→	marine particulates mist and fog dust and sand smoke and pollution volcanic ash no particulates
SNOWFALL_DESCRIPTION	→	light snow moderate snow heavy snow
WIND_DESCRIPTION	→	a light breeze a moderate breeze a heavy breeze
RAINFALL_DESCRIPTION	→	light rain moderate rain heavy rain

1.3 Scenery

SCENERY_DESCRIPTION → JUNCTION_DESCRIPTION ROAD_DESCRIPTION

1.3.1 Junctions

JUNCTION_DESCRIPTION → **There is no junction present.** | JUNCTION_ELEMENT⁺

JUNCTION_ELEMENT → **There is a** JUNCTION_TYPE , ID , **which has connections with** ROAD_ID_LIST .
(CONNECTION_DESCRIPTION .)*

JUNCTION_TYPE → INTERSECTION | ROUNDABOUT | STRING

INTERSECTION → **T-Junction** | **Y-Junction** | **staggered junction**
| **staggered** | **crossroad**
| **grade separated junction**

ROUNDABOUT → **normal roundabout** | **large roundabout** | **double roundabout**
| **compact roundabout** | **mini roundabout**

ROAD_ID_LIST → ID (, ID)* (and ID)

CONNECTION_DESCRIPTION → ID to ID is CONNECTION_TYPE

CONNECTION_TYPE → **straight ahead** | **turning right** | **turning left** | **to the left** | **to the right**

1.3.2 Roads

ROAD_DESCRIPTION → ROAD_GEOMETRY⁺ ADDITIONAL_ROAD_FEATURES*

ROAD_GEOMETRY → ((ID is a) | (ROAD_ID_LIST are)) HORIZONTAL_GEOMETRY_TYPE , ROAD_TYPE
[with TRAFFIC_TYPE traffic] .

HORIZONTAL_GEOMETRY_TYPE → HORIZONTAL_GEOMETRY_ENUM | STRING

HORIZONTAL_GEOMETRY_ENUM → **straight** | **curved**

ROAD_TYPE → ROAD_ENUM | STRING

ROAD_ENUM → **motorway** | **radial road** | **distributor road** |
minor road | **parking zone** | **motorways** |
radial roads | **distributor roads** |
minor roads | **parking zones**

ADDITIONAL_ROAD_FEATURES → **Also** , ((ID has) | (ROAD_ID_LIST have))
ROAD_FEATURE_TYPE [(, ROAD_FEATURE_TYPE)* (and ROAD_FEATURE_TYPE)] .

ROAD_FEATURE_TYPE → ROAD_FEATURE_ENUM | STRING

ROAD_FEATURE_ENUM → **broken lane markings** | **solid lane markings** | **temporary lane markings** |
pedestrian crossing | **trees** | **buildings** |
solid barriers | **street lights** | **traffic lights**

TRAFFIC_TYPE → **no** | **light** | **some** | **moderate** | **heavy** | **a lot of**

1.4 Dynamic

DYNAMIC_DESCRIPTION → INITIALISATION_DESC (SSMS)+

INITIALISATION_DESC → ACTOR_INITIALISATION⁺ ACTOR_LOCATIONS

ACTOR_INITIALISATION → **There (is | are)** INT ACTOR_TYPE , ACTOR_NAMES .

ACTOR_NAMES	→	ID [(, ID)* (and ID)]
ACTOR_TYPE	→	vehicle pedestrian cyclist vehicles pedestrians cyclists
ACTOR_LOCATIONS	→	ACTOR_LOCATION [(, ACTOR_LOCATION)* (and ACTOR_LOCATION)] .
ACTOR_LOCATION	→	ID is in ID
SSMS	→	When PHASES (NEXT_TRIGGER PHASES)* ID operates autonomously .
PHASES	→	WHEN_CONDITIONS FIRST_PHASE (OTHER_PHASE)* .
WHEN_CONDITIONS	→	WHEN_CONDITION [(, WHEN_CONDITION)* and WHEN_CONDITION]
WHEN_CONDITION	→	ID MANOEUVRE_SEQUENCE the traffic light REL_ACTION_LOCATION ID is TRAFFIC_LIGHT_COLOUR
TRAFFIC_LIGHT_COLOUR	→	green amber red
FIRST_PHASE	→	ID MANOEUVRE_SEQUENCE
OTHER_PHASE	→	OTHER_PHASE_TYPE1 OTHER_PHASE_TYPE2
OTHER_PHASE_TYPE1	→	(, . ID) [then] MANOEUVRE_SEQUENCE
OTHER_PHASE_TYPE2	→	(, and . And) [then] [ID] MANOEUVRE_SEQUENCE
NEXT_TRIGGER	→	(Also Next) , [when as]
MANOEUVRE_SEQUENCE	→	DOES_SOMETHING [, REL_SPEED_CONDITION [,]] (REL_ACTION_LOCATION)* [REF_ACTOR+=REF_ACTOR [(, REF_ACTOR+=REF_ACTOR)* and REF_ACTOR+=REF_ACTOR]] [at its REL_POSITION]
REF_ACTOR	→	ID POSITIONAL_PREPOSITION ID
POSITIONAL_PREPOSITION	→	near on onto into
DOES_SOMETHING	→	is driving is cutting in is cutting out is stopped drives cuts in cuts out stops changes lane right changes lane left turns right turns left reverses collides walks runs slides cutting in cutting out
REL_ACTION_LOCATION	→	towards ahead of across in front of behind from with ahead away
REL_POSITION	→	front rear left front left rear left right front right rear right
REL_SPEED_CONDITION	→	accelerating speeding up at constant speed decelerating slowing down

Chapter 2

Logical SDL Level-2 Syntax

2.1 Starting Rules

SDL	→	HEADER SCENERY_ELEMENTS DYNAMIC_ELEMENTS [INTERNAL_ELEMENTS] ENVIRONMENT_ELEMENTS [TRAFFIC_MODEL]
HEADER	→	VERSION FILE_DETAILS
VERSION	→	VERSION ':' INT.INT
FILE_DETAILS	→	[EXTENSION] AUTHOR [AUTHOR] EXTENSION
EXTENSION	→	EXTENSION ':' None
AUTHOR	→	AUTHOR ':' STRING
INTERNAL_ELEMENTS	→	INTERNAL ELEMENTS ':' STRING

2.2 Scenery

SCENERY_ELEMENTS	→	SCENERY ELEMENTS ':' DO ':' STRING '[' ID '['] as ':' JUNCTION_ELEMENTS ROAD_ELEMENTS
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2.2.1 Junctions

JUNCTION_ELEMENTS	→	Junctions ':' (None JUNCTION_ELEMENT ⁺)
JUNCTION_ELEMENT	→	ID ':' Junction type '[' JUNCTION_TYPE '['] as '[' ID '['] which has '[' CONNECTION_CONTROL_TYPE '['] connection control and '[' INT '['] (connection connections) with '[' ROAD_ID_LIST '['] Angles between roads '[' ROAD_ANGLES_MAP '['] '[' ROAD_ANGLES '['] Road lane connections '[' ROAD_LANE_CONNECTIONS '['] Dimensions '[' ((Width ':' DOUBLE_RANGE ',' Depth ':' DOUBLE_RANGE) (Diameter ':' DOUBLE_RANGE)) '['] [Road signs ROAD_SIGN_DESCRIPTION] [Traffic light TRAFFIC_LIGHT_DESCRIPTION]

JUNCTION_TYPE	→	INTERSECTION ROUNDABOUT
INTERSECTION	→	T-Junction Y-Junction Staggered Crossroads Grade Separated STRING
ROUNDABOUT	→	Normal roundabout Large roundabout Double roundabout Compact roundabout Mini roundabout STRING
CONNECTION_CONTROL_TYPE	→	Traffic light Give way No STRING
ROAD_ID_LIST	→	ROAD_ID (‘,’ ROAD_ID)*
ROAD_ANGLES_MAP	→	ROAD_ID ‘->’ ROAD_ID (‘,’ ROAD_ID ‘->’ ROAD_ID)*
ROAD_ANGLES	→	DOUBLE_RANGE (‘,’ DOUBLE_RANGE)*
ROAD_LANE_CONNECTIONS	→	ROAD_LANE_CONNECTION (‘,’ ROAD_LANE_CONNECTION)*
ROAD_LANE_CONNECTION	→	ROAD_LANE_QNAME ‘->’ ROAD_LANE_CONNECTION_LIST
ROAD_LANE_CONNECTION_LIST	→	ROAD_LANE_QNAME (‘+’ ROAD_LANE_QNAME)*
ROAD_LANE_QNAME	→	ROAD_ID ‘.’ LANE_ID % First ID is a road ID, second is a Lane ID %
ROAD_SIGN_DESCRIPTION	→	‘[’ ROAD_SIGN+ ‘]’ at ‘[’ ROAD_LANE_QNAME_LIST ‘]’
ROAD_SIGN	→	Traffic Light Warning Give way Stop STRING
ROAD_LANE_QNAME_LIST	→	ROAD_LANE_QNAME (‘,’ ROAD_LANE_QNAME)*
TRAFFIC_LIGHT_DESCRIPTION	→	‘[’ TRAFFIC_LIGHT_TYPE ‘]’ as ‘[’ TRAFFIC_LIGHT_MAP ‘]’
TRAFFIC_LIGHT_TYPE	→	With pedestrian crossing Without pedestrian crossing STRING
TRAFFIC_LIGHT_MAP	→	TL_ROAD_LANE_MAP (‘,’ TL_ROAD_LANE_MAP)*
TL_ROAD_LANE_MAP	→	ID ‘->’ (ROAD_LANE_QNAME ROAD_ID)

2.2.2 Roads

ROAD_ELEMENTS	→	Roads ‘:’ ROAD_ELEMENT⁺
ROAD_ELEMENT	→	None ROAD_ID ‘:’ START [‘:’ ‘[’ ID ‘]’] Road type ‘[’ ROAD_TYPE ‘]’ as ‘[’ ROAD_ID ‘]’ with zone as ‘[’ ZONE_TYPE ‘]’ AND speed limit of ‘[’ (DOUBLE N/A) ‘]’ in (a an) ‘[’ ENVIRONMENT_TYPE ‘]’ environment with Number of lanes ‘[’ INT ‘]’ as ‘[’ ROAD_LANE_QNAME_LIST ‘]’ Road traffic direction ‘[’ TRAFFIC_DIRECTION ‘]’ Lane type ‘[’ LANE_TYPE ‘]’ Lane markings ‘[’ LANE_MARKING_TYPE ‘]’ [Road surface type ‘[’ SURFACE_TYPE ‘]’] [with surface condition ‘[’ SURFACE_CONDITION ‘]’] [AND surface feature ‘[’ SURFACE_FEATURE ‘]’] Horizontal road geometry ‘[’ HORIZONTAL_GEOMETRY ‘]’ [with curvature radius of ‘[’ CURVATURE_RADIUS ‘]’] Vertical road geometry ‘[’ VERTICAL_GEOMETRY ‘]’ Transverse road geometry ‘[’ TRANSVERSE_GEOMETRY ⁺ ‘]’ Road banking angle [BANKING_ANGLE_ENUM] with ‘[’ ROADSIDE_FEATURE ‘]’ roadside feature [Roadway edge features ‘[’ ROAD_EDGE_FEATURE ‘]’] (Special road structures ‘[’ SPECIAL_ROAD_STRUCTURE ‘]’ as ‘[’ ID ‘]’ at ‘[’ DOUBLE ‘]’ distance from START)* (Fixed road structures ‘[’ FIXED_ROAD_STRUCTURE_LIST ‘]’)*

(**Temporary road structures** '[' TEMP_ROAD_STRUCTURE_LIST ']' at ROAD_LANE_QNAME)
 (**Road sign** '[' ROAD_SIGNS ']' as '[' ID ']' at '[' DOUBLE ']' **distance from START**)
Length '[' DOUBLE_RANGE ']' **AND**
Lane width '[' (DOUBLE_RANGE | SEG_LENGTH (',' SEG_LENGTH)*) '['
END [':' '[' ID ']']

SEG_LENGTH	→	ID ':' DOUBLE_RANGE
ROAD_TYPE	→	Motorway Radial road Distributor road Minor road Parking STRING
ZONE_TYPE	→	N/A STRING
ENVIRONMENT_TYPE	→	Urban Rural STRING
TRAFFIC_DIRECTION	→	Left-handed Right-handed STRING
LANE_TYPE	→	Traffic lane STRING
LANE_MARKING_TYPE	→	Broken line Solid line STRING
SURFACE_TYPE	→	Loose Segmented Uniform STRING
SURFACE_CONDITION	→	Dry Wet Snow Contaminated Icy Mirage Flooded STRING
SURFACE_FEATURE	→	Cracks Potholes Ruts Swells N/A STRING
HORIZONTAL_GEOMETRY	→	HORIZONTAL_GEOMETRY_TYPE HORIZONTAL_GEOMETRY_MAP
HORIZONTAL_GEOMETRY_MAP	→	ID ':' HORIZONTAL_GEOMETRY_TYPE (',' ID ':' HORIZONTAL_GEOMETRY_TYPE)*
HORIZONTAL_GEOMETRY_TYPE	→	Straight Curved STRING
CURVATURE_RADIUS	→	CURVATURE_RADIUS_MAP (',' CURVATURE_RADIUS_MAP)* N/A
CURVATURE_RADIUS_MAP	→	ID ':' (DOUBLE_RANGE N/A)
VERTICAL_GEOMETRY	→	Up-slope Down-slope Level plane STRING
TRANSVERSE_GEOMETRY	→	Divided Undivided Pavement STRING
ROADSIDE_FEATURE	→	No STRING
ROAD_EDGE_FEATURE	→	Shoulder (grass) Solid barriers Temporary line markers Pavement Line markers Shoulder (paved or gravel) STRING
SPECIAL_ROAD_STRUCTURE	→	SPL_ROAD_STRUCTURE_ENUM STRING
SPL_ROAD_STRUCTURE_ENUM	→	Bridge Tunnel Rail crossing Automated barrier Pedestrian crossing Toll plaza Speed bump
FIXED_ROAD_STRUCTURE_LIST	→	FIXED_ROAD_STRUCTURE (',' FIXED_ROAD_STRUCTURE)*
FIXED_ROAD_STRUCTURE	→	FIXED_ROAD_STRUCTURE_TYPE [at '[' ID (',' ID)* '[']
FIXED_ROAD_STRUCTURE_TYPE	→	STREET_LIGHTS FIXED_ROAD_STRUCTURE_ENUM STRING
STREET_LIGHTS	→	Street lights ':' '{' spacing ':' DOUBLE_RANGE ',' height ':' DOUBLE_RANGE '{'
FIXED_ROAD_STRUCTURE_ENUM	→	Vegetation Street furniture Buildings
TEMP_ROAD_STRUCTURE_LIST	→	TEMP_ROAD_STRUCTURE (',' TEMP_ROAD_STRUCTURE)*
TEMP_ROAD_STRUCTURE	→	TEMP_STRUCTURE_ENUM STRING
TEMP_STRUCTURE_ENUM	→	Accident site Road works Construction site detour Refuse collection Flood

ROAD_SIGNS	→	ROAD_SIGN_ENUM STRING
ROAD_SIGN_ENUM	→	Speed limit
BANKING_ANGLE_ENUM	→	Level Plane Left Bank - Shallow Left Bank - Deep Right Bank - Shallow Right Bank - Deep

2.3 Dynamic

DYNAMIC_ELEMENTS	→	DYNAMIC ELEMENTS ':' INITIALISATION SSMS ⁺ (END CONDITIONAL_END)
INITIALISATION	→	INITIAL ':' ABS_VEHICLE_INIT (AND REL_VEHICLE_INIT)* (AND TIMER_INITIALISATION)*
ABS_VEHICLE_INIT	→	ACTOR_TYPE '[' ID ']' in '[' ROAD_LANE_QNAME ']' [at '[' ABS_LOCATION ']'] [at heading angle '[' DOUBLE_RANGE ']']
ACTOR_TYPE	→	Vehicle Pedestrian Cyclist
ABS_LOCATION	→	DOUBLE ',', DOUBLE
REL_VEHICLE_INIT	→	ACTOR_TYPE '[' ID ']' in '[' ROAD_LANE_QNAME ']' [OFFSET_RELATION [AND OFFSET_RELATION]] AND at relative position '[' RELATIVE_LOCATION ']' with relative heading angle '[' DOUBLE_RANGE ']' to '[' ID ']'
OFFSET_RELATION	→	with a '[' POSITION_RELATION ']' offset of '[' DOUBLE_RANGE ']'
RELATIVE_LOCATION	→	F FSR SR RSR R RSL SL FSL
CONSTRAINT	→	Within Not within
TIMER_INITIALISATION	→	GLOBAL_TIMER_INIT LOCAL_TIMER_INIT
GLOBAL_TIMER_INIT	→	Global timer '[' ID ']' '=' '[' DOUBLE ']'
LOCAL_TIMER_INIT	→	Local timer '[' ID ']' '=' '[' DOUBLE ']'
SSMS	→	%SYNCHRONISED_SERIAL_MANOEUVRE_SEQUENCE WHEN ':' WHEN_CONDITION (AND WHEN_CONDITION)* DO ':' (SERIAL_MANOEUVRE_SEQ (AND ':' SERIAL_MANOEUVRE_SEQ)* AUTO)
WHEN_CONDITION	→	EGO_POSITION_CONDITION TRAFFIC_LIGHT_CONDITION
EGO_POSITION_CONDITION	→	'[' ID ']' is '[' EGO_OBSERVED_INFO ']' [in '[' ROAD_LANE_QNAME ID ']'] [at a speed of '[' DOUBLE_RANGE ']']
TRAFFIC_LIGHT_CONDITION	→	'[' ID (' , ' ID)* ']' (is are) '[' (Green Amber Red) ']'
EGO_OBSERVED_INFO	→	Going Ahead Stopped LaneChangeRight LaneChangeLeft TurnRight TurnLeft Reverse STRING
SERIAL_MANOEUVRE_SEQ	→	'[' ID ']' MANOEUVRE_PHASE ⁺
MANOEUVRE_PHASE	→	PHASE INT ':'

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[' MP_TYPE ']'
[' MP_AGENT_PARAMS ']'
[' MP_RELATIVE_AGENT_PARAMS ']'
[ WHILE ':' MP_WHILE_PARAMS]

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MP_TYPE	→	Drive_CutIn Drive_CutOut Drive_Towards Drive_Away Stop Stopped LaneChangeRight_CutIn LaneChangeRight_CutOut LaneChangeRight_Towards LaneChangeRight_Away LaneChangeLeft_CutIn LaneChangeLeft_CutOut LaneChangeLeft_Towards LaneChangeLeft_Away TurnRight_CutIn TurnRight_CutOut TurnRight_Towards TurnRight_Away TurnLeft_CutIn TurnLeft_CutOut TurnLeft_Towards TurnLeft_Away Reverse_CutIn Reverse_CutOut Reverse_Towards Reverse_Away Misc_CutIn Misc_Cutout Misc_Towards Misc_Away Collide_CutIn Collide_Cutout Collide_Towards Collide_Away Walk_Towards Walk_Cross Walk_Away Run_Towards Run_Cross Run_Away Slide_Towards Slide_Cross Slide_Away
MP_AGENT_PARAMS	→	(ID '-') ',' DOUBLE_RANGE ',' DOUBLE_RANGE
MP_RELATIVE_AGENT_PARAMS	→	ID ':' DOUBLE_RANGE ',' RELATIVE_LOCATION
MP_WHILE_PARAMS	→	TIMER_CONSTRAINT POSITION_CONSTRAINT
TIMER_CONSTRAINT	→	'[' ID ']' COMPARISON '[' DOUBLE ']'
POSITION_CONSTRAINT	→	'[' ID ']' '[' POSITION_RELATION ']' offset to '[' ID ']' COMPARISON '[' DOUBLE ']' '[' ID ']' in '[' ROAD_LANE_QNAME ']' [[OFFSET_RELATION [AND OFFSET_RELATION]] [AND at relative position '[' RELATIVE_LOCATION ']'] [with relative heading angle '[' DOUBLE_RANGE ']'] to '[' ID ']']
POSITION_RELATION	→	Lateral Longitudinal
COMPARISON	→	< <= > >= == !=
CONDITIONAL_END	→	END: DYNAMIC_END_CONDITION (OR DYNAMIC_END_CONDITION)*
DYNAMIC_END_CONDITION	→	TIMER_CONSTRAINT POSITION_CONSTRAINT Collision % As referenced from the ALKS examples

2.4 Traffic

TRAFFIC_MODEL	→	TRAFFIC ELEMENTS ':' INITIAL TRAFFIC_INIT_PARAMS (AND TRAFFIC_INIT_PARAMS)* DO ':' TRAFFIC_ELEMENT ⁺
TRAFFIC_INIT_PARAMS	→	% Centroid in a road at distance to scenery element CENTROID '[' ID ']' in '[' ID ']' at '[' DOUBLE_RANGE ']' to '[' ID ']'
TRAFFIC_ELEMENT	→	TRAFFIC '[' ID ']' ':' TRAFFIC_DESCRIPTION
TRAFFIC_DESCRIPTION	→	% Source-Destination Centroid ID and Road-Lane ID '[' ID ':' ROAD_LANE_QNAME ',' ID ':' ROAD_LANE_QNAME ']' 'at' '[' DOUBLE_RANGE ','

DOUBLE_RANGE
']'

2.5 Environment

ENVIRONMENT_ELEMENTS	→	ENVIRONMENT_ELEMENTS ':' DO ':' '[' ID '[']' [Wind '[' DOUBLE_RANGE '[']] Cloudiness '[' DOUBLE_RANGE '[']' [Particulates '[' PARTICULATES_TYPE '[']] Rainfall '[' RAINFALL_TYPE ':' DOUBLE_RANGE '[']' [Snowfall '[' SNOWFALL_TYPE '(' visibility ':' DOUBLE_RANGE ')', '[']] Time of the day '[' (TIME_RANGE Any) '[']' Illumination '[' LIGHT_TYPE '[']' with '[' LIGHT_SOURCE '[']' as light source [at '[' DOUBLE_RANGE '[']' degree elevation AND '[' LIGHT_POSITION '[']' position] [Connectivity '[' CONNECTIVITY_TYPE '[']]
PARTICULATES_TYPE	→	Marine Mist and Fog Sand and Dust Smoke and Pollution Volcanic Ash None
RAINFALL_TYPE	→	Light Rain Moderate Rain Heavy Rain
SNOWFALL_TYPE	→	Light Snow Moderate Snow Heavy Snow
TIME_RANGE	→	INT ':' INT 'to' INT ':' INT
LIGHT_TYPE	→	Day Night Lit Night Dark Artificial
LIGHT_SOURCE	→	Sun Headlamp Street Lighting STRING
LIGHT_POSITION	→	RELATIVE_LOCATION
CONNECTIVITY_TYPE	→	None Communication ':' COMMUNICATION_ENUM ',' Positioning ':' POSITIONING_ENUM
COMMUNICATION_ENUM	→	V2V ':' V2V_ENUM V2I ':' V2I_ENUM
V2V_ENUM	→	Cellular Satellite WiFi
V2I_ENUM	→	V2V_ENUM GLOSA
POSITIONING_ENUM	→	Galileo GLONASS GPS
DOUBLE_RANGE	→	DOUBLE to DOUBLE
DOUBLE	→	['-'] INT ['.' INT]