**IEEE P802.19**

**Wireless Coexistence**

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| --- | --- |
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| Purpose | [] |
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# **Executive Summary**

This submission provides the text proposal for Annex A of IEEE 802.19.1 Rev.

The proposal contains the followings:

* Merge ASN.1 codes of 802.19.1 and 802.19.1a so as not to conflict each other.
* Fix ASN.1 compiling error in the existing text of Annex A of 802.19.1
* Editorial changes for better readability

**------------------------------------------- Proposed Changes ---------------------------------------**

# **(normative) Data types**

IEEE802191DataType DEFINITIONS AUTOMATIC TAGS ::= BEGIN

**-----------------------------------------------------------**

**--Exported data types**

**-----------------------------------------------------------**

--Exported data types

EXPORTS

 --Coexistence protocol entity ID

 CxID,

 --Status

 Status,

 --CxMedia status

 CxMediaStatus,

 --Coexistence service

 CoexistenceService,

 --Subscribed service

 SubscribedService,

 --Network technology

 NetworkTechnology,

 --Network type

 NetworkType,

 --Discovery information

 DiscoveryInformation,

 --Geolocation

 Geolocation,

 --Coverage area

 CoverageArea,

 --Installation parameters

 InstallationParameters,

 --Frequency range

 FrequencyRange,

 --List of available frequencies

 ListOfAvailableFrequencies,

 --List of operating frequencies

 ListOfOperatingFrequencies,

 --List of available channel numbers

 ListOfAvailableChNumbers,

 --List of operating channel numbers

 ListOfOperatingChNumbers,

 --List of supported frequencies

 ListOfSupportedFrequencies,

 --Required resource

 RequiredResource,

 --Operation code for registration

 OperationCode,

 --Measurement capability

 MeasurementCapability,

 --List of available frequencies of the subject WSO

 ListOfSubjectWSOAvailableFrequencies,

 --Transmission schedule

 TxSchedule,

 --CM registration

 CMRegistration,

 --CE registration

 CERegistration,

 --Coexistence report

 CoexistenceReport,

 --Channel priority

 ChannelPriority,

 --List of subject CEs

 ListOfSubjectCEs,

 --List of neighbor CMs transport information

 ListOfNeighborCMsTransport,

 --List of neighbor CM

 ListOfNeighborCMs,

 --List of neighbor CM WSOs

 ListOfNeighborCMWSOs,

 --List of CEs for reconfiguration

 ReconfigListOfCEs,

 --Channel classification information

 ChClassInfo,

 --Channel classification information list

 ChClassInfoList,

 --Failed parameters

 FailedParameters,

 --Event parameters

 EventParams,

 --Required information description

 ReqInfoDescr,

 -- Requested information value

 ReqInfoValue,

 -- Negotiation status

 NegotiationStatus,

 -- Negotiation information

 NegotiationInformation,

 -- Winner CM ID list

 ListOfWinnerCMID,

 -- Slot time position list

 ListOfSlotTimePosition,

 --Measurement description

 MeasurementDescription,

 --Measurement result

 MeasurementResult,

 --Mobility Information

 MobilityInformation,

 --Entity profile

 EntityProfile,

 --List of master CM candidates

 ListOfMasterCMCandidates,

 --List of neighbor CMs

 ListOfNeighborCMs,

 --Coexistence protocol entity type

 CxType,

 --Guaranteed QoS of backhaul connection

 GuaranteedQoSOfBackhaulConnection,

 --List of coexistence reports

 ListOfCoexistenceReports,

 --List Of Accessible CMs

 ListOfAccessibleCMs,

 --List of GCOs

 ListOfGCOs,

 --List of CEs

 ListOfCEs,

 --List of desired performances

 ListOfDesiredPerformances,

 --Coordinates

 Coordinates,

 --Range

 Range,

 --Region

 Region,

 --Antenna Characteristics

 AntennaCharacteristics,

 --Capability of multi-antenna signal processing

 MultiAntProCap,

 --Type of frequency

 TypeOfFrequency,

 --GCO Descriptor

 GCODescriptor,

 --Receiver information

 ReceiverInfo,

 --Receiver type

 ReceiverType,

 --Modulation type

 ModulationType,

 --Filter characteristics

 FilterCharacteristics,

 --Energy detection information

 EnergyDetectionInfo,

 --Spectrum request modification

 SpecRequestModification,

 --Graph edge

 GraphEdge,

 --Interference relationship graph

 InterferenceRelationshipGraph,

 --Spectrum allocation supporting information

 SpecAllocationSupportingInfo,

 --List of candidate serving CMs

 ListOfCandidateServingCMs,

 --List of moving GCOs

 ListOfMovingGCOs,

 --List of candidate served GCOs

 ListOfCandidateServedGCOs,

 --List of estimated available bandwidth

 ListOfEstimatedAvailableBandwidth;

**-----------------------------------------------------------**

**--Coexistence protocol entity ID**

**-----------------------------------------------------------**

--Coexistence protocol entity type

CxType ::= ENUMERATED {

 --Coexistence enabler

 ce,

 --Coexistence manager

 cm,

 --Coexistence discovery and information server

 cdis,

 --Coordination enabler

 coe

}

--Coexistence protocol entity ID

CxID ::= SEQUENCE {

 --Entity type

 type CxType,

 --Entity ID

 id OCTET STRING

}

**-----------------------------------------------------------**

**--Status**

**-----------------------------------------------------------**

--Status

Status ::= ENUMERATED {

 --Primitive/message is successfully processed

 noError,

 --Primitive/message is rejected due to security reasons

 rejected,

 --Primitive/message cannot be successfully processed because according to the current entity status different primitive/message is expected

 invalidEntityStatus,

 --Primitive/message cannot be successfully processed because of invalid values of parameters

 invalidArgument,

 --Primitive/message cannot be successfully processed because of the process error in the receiving entity

 processFailure,

 --Primitive/message cannot be successfully processed because of the connection error

 networkFailure

}

--CxMedia status

CxMediaStatus ::= ENUMERATED {

 noErrorAccepted,

 noErrorRejected,

 errorInvalidEntityStatus,

 errorInvalidArgument,

 errorProcessFailure,

 errorNetworkFailure,

 errorUnknown

}

**-----------------------------------------------------------**

**--Coexistence service**

**-----------------------------------------------------------**

--Coexistence service

CoexistenceService ::= ENUMERATED {

 --Information service

 information,

 --Management service

 management,

 --No service

 noService

}

SubscribedService ::= ENUMERATED {

 information,

 management,

 interCMCoexistenceSetElementsNeighbors,

 allCoexistenceSetElementsNeighbors

}

**-----------------------------------------------------------**

**--Network technology**

**-----------------------------------------------------------**

NetworkTechnology ::= ENUMERATED {

 --IEEE 802.11 technologies except for IEEE 802.11af

 ieee802dot11Technology,

 --IEEE 802.11af

 ieee802dot11af,

 --IEEE 802.22

 ieee802dot22,

 --Radio microphone

 radioMic,

 --Area broadcast

 areaBroadcast,

 --ECMA 392

 ecma392,

 --3GPP Technology

 technologyOf3gpp,

 --MulteFire

 multeFire,

 ...

}

**-----------------------------------------------------------**

**--Network type or device category**

**-----------------------------------------------------------**

NetworkType ::= ENUMERATED {

 --For TVBD complied with FCC C.F.R Part 15

 fixed,

 mode1,

 mode2,

 --For WSD complied with ETSI EN 301 598

 typeA,

 typeB,

 --For CBSD complied with FCC C.F.R Part 96

 categoryA,

 categoryB,

 ...

}

-----------------------------------------------------------

-- List of accessible CMs

-----------------------------------------------------------

--List of accessible CMs (Used in Profile 3)

ListOfAccessibleCMs ::= SEQUENCE OF SEQUENCE {

 --CM ID

 cmID CxID OPTIONAL,

 --IP address

 ipAddress OCTET STRING OPTIONAL,

 --Port number

 portNumber INTEGER OPTIONAL,

 --Server password

 serverPassword IA5String OPTIONAL,

 ...

}

**-----------------------------------------------------------**

**--Discovery information**

**-----------------------------------------------------------**

DiscoveryInformation ::= SEQUENCE {

 --Latitude [degree]

 coordinateX REAL OPTIONAL,

 --Longitude [degree]

 coordinateY REAL OPTIONAL,

 --Altitude [m]

 coordinateZ REAL OPTIONAL,

 --Maximum transmit power [dBm]

 maxTxPower REAL OPTIONAL,

 --Receiver sensitivity [dBm]

 rxSensitivity REAL OPTIONAL,

 --Antenna gain [dBi]

 antennaGain REAL OPTIONAL,

 --Minimum required SNR [dB]

 minReqSNR REAL OPTIONAL,

 --Antenna height above ground [m]

 antennaHeight REAL OPTIONAL,

 ...

}

----------------------------------------------------------------------------

--Region information

----------------------------------------------------------------------------

--Region (Used in Profile 3)

Region ::= SEQUENCE{

 --Sequence of geolocation. The size shall be more than 3.

 geolocation SEQUENCE OF Geolocation

}

--Rectangular Region (Used in Profile 3)

RectangularRegion ::= SEQUENCE{

 --Geolocation of the upper-left point of the rectangular

 geolocationUpper Geolocation,

 --Geolocation of the lower-right point of the rectangular

 geolocationLower Geolocation

}

--Range (Used in Profile 3)

Range ::= CHOICE {

 --Information of the bounded area defined by the multiple geolocations

 multipointRegion Region,

 --Rectangular area defined by the upper-left and lower right points

 rectangularRegion RectangularRegion

}

**-----------------------------------------------------------**

**--Location**

**-----------------------------------------------------------**

--Coordinates

Coordinates ::=

--Location

Geolocation ::= CHOICE {

 --Place name or ID

 placeID OCTET STRING,

 --Coordinates of the GCO

 coordinates Coordinates

}

**-----------------------------------------------------------**

**--Coverage area**

**-----------------------------------------------------------**

--Coverage area

CoverageArea ::= SEQUENCE {

 --Coverage radius [m]

 radius REAL OPTIONAL,

 --Reference central frequency [MHz]

 refFrequency REAL OPTIONAL,

 --Reference height of master station [m]

 refMasterHeight REAL OPTIONAL,

 --Reference height of slave station [m]

 refSlaveHeight REAL OPTIONAL,

 --Reference transmission power [dBm]

 refTxPower REAL OPTIONAL,

 ...

}

**-----------------------------------------------------------**

**--Antenna information**

**-----------------------------------------------------------**

--Height type (Used in Profile 3)

HeightType ::= ENUMERATED {

 --Above ground level

 agl,

 --Above sea level

 asl

}

--Antenna type (Used in Profile 3)

AntennaType ::= ENUMERATED {

 --Linear array

 linear,

 --Planar array

 planar,

 --Circular

 circular,

 ...

}

--MIMO type (Profile 3)

MIMOType ::= ENUMERATED {

 --2D MIMO

 twoDimentional,

 --3D MIMO

 threeDimentional

}

-- Multiple antenna processing capability (Profile 3)

MultiAntProCap ::= ENUMERATED {

 --Directional beam forming capability

 beamforming,

 --Multiple antenna precoding capability

 precoding,

 ...

}

--Antenna Characteristics (Profile 3)

AntennaCharacteristics ::= SEQUENCE {

 --Antenna height [meter]

 antennaHeight REAL OPTIONAL,

 --Antenna height type

 antennaHeightType HeightType OPTIONAL,

 --Antenna gain [dB]

 antennaGain REAL OPTIONAL,

 --Antenna type

 antennaType AntennaType OPTIONAL,

 --Number of antenna

 numberOfAntenna INTEGER OPTIONAL,

 --MIMO type

 mimoType MIMOType OPTIONAL,

 --Multiple antenna processing capability

 multiAntProCap MultiAntProCap OPTIONAL,

 --Azimuth angle [deg]

 azimuthAngle REAL OPTIONAL,

 --Downtilt angle [deg]

 downtiltAngle REAL OPTIONAL,

 --beamwidth [deg]

 beamwidth REAL OPTIONAL,

 ...

}

--Receiver information (Profile 3)

ReceiverInfo ::= SEQUENCE {

 --Receiver type

 receiverType ReceiverType OPTIONAL,

 -- Modulation Type

 modulationType ModulationType OPTIONAL,

 -- Filter Characteristics

 filterCharacteristics FilterCharacteristics OPTIONAL,

 --Tolerable interference level[dBm]

 tolerableInterferenceLevel REAL OPTIONAL

}

--Receiver type (Profile 3)

ReceiverType ::= ENUMERATED {

 --Successive interference canceller

 sic,

 --Zero-forcing

 zeroForcing,

 ...

}

--Modulation Type (Profile 3)

ModulationType ::= ENUMERATED {

 --OFDM

 ofdm,

 --FBMC

 fbmc,

 ...

}

--Modulation parameters (Profile 3)

ModulationParameters ::= SEQUENCE OF CHOICE{

 ofdm BOOLEAN,

 --The overlapping K factor for FBMC

 fbmcoverlappingFactor INTEGER,

 ...

}

--Filter Characteristics (Profile 3)

FilterCharacteristics ::= SEQUENCE {

 --Adjacent channel selectivity of the GCO [dB]

 acs REAL OPTIONAL,

 --FBMC overlapping factor range as the maximum number

 fbmcOverlappingFactor INTEGER OPTIONAL,

 ...

}

--SIC demodulation procedure (Profile 3)

SICDemodulationProcedure ::= ENUMERATED{

 --demodulate desired signal directly

 procedure1,

 --demodulate interference then desired signal

 procedure2,

 ...

}

**-----------------------------------------------------------**

**--Installation parameters**

**-----------------------------------------------------------**

--Installation parameters

InstallationParameters ::= SEQUENCE {

 --Operating height of master station [m] (Profile 2 only)

 opMasterHeight REAL OPTIONAL,

 --Operating height of slave station [m] (Profile 2 only)

 opSlaveHeight REAL OPTIONAL,

 --Operating transmission power [dBm] (Profile 2 only)

 opTxPower REAL OPTIONAL,

 --Geolocation of GCO (Profile 3 only)

 geolocation Geolocation OPTIONAL,

 --Antenna characteristics of GCO (Profile 3 only)

 antennaCharacteristics AntennaCharacteristics OPTIONAL,

 -- EIRP capability [dBm/MHz] of GCO (Profile 3 only)

 eirpCapability REAL OPTIONAL,

 --Adjacent channel leakage ratio of the GCO [dB] (Profile 3 only)

 aclr REAL OPTIONAL,

 --Guaranteed QoS of backhaul connection of the GCO (Profile 3 only)

 guaranteedQoSOfBackhaulConnection GuaranteedQoSOfBackhaulConnection OPTIONAL,

 --Receiver information (Profile 3 only)

 receiverInfo ReceiverInfo OPTIONAL,

 --Management regional range of GCO (Profile 3 only)

 managementRange Range OPTIONAL,

 --Indoor deployment (Profile 3 only)

 indoorDeployment BOOLEAN OPTIONAL,

 ...

}

-----------------------------------------------------------

-- List of desired performances

-----------------------------------------------------------

--List of desired performances (Profile 3)

ListOfDesiredPerformances ::= SEQUENCE OF SEQUENCE {

 --Subject frequency range

 frequencyRange FrequencyRange OPTIONAL,

 --Desired energy detection successful rate in percentage [0 ~ 100]

 desiredEnergyDectionSuccessRate REAL OPTIONAL,

 --Percentage of activated cells of one operator [0 ~ 100]

 desiredActivationRate REAL OPTIONAL,

 ...

}

**-----------------------------------------------------------**

**--Guaranteed QoS of backhaul connection related data types**

**----------------------------------------------------------**

--Bakhaul Type identifier (Profile 3)

BackhaulTypeID ::= ENUMERATED{

 xDSL,

 opticalFibre,

 ...

}

--Guaranteed QoS of backhaul connection

GuaranteedQoSOfBackhaulConnection ::= SEQUENCE{

 --Backhaul type ID

 backhaulTypeID BackhaulTypeID OPTIONAL,

 --Guaranteed minimum bit rates of backhaul connection [Mb/s]

 guaranteedMinimumBitRates REAL OPTIONAL,

 --Guaranteed maximum latency [ms]

 guaranteedMaximumLatency REAL OPTIONAL,

 ...

}

--Spectrum request modification (Profile 3)

SpecRequestModification ::= SEQUENCE {

 --Spectrum request grouping information. GCOs with the same group index request spectrum together.

 groupIndex REAL OPTIONAL,

 --Spectrum that GCO shall check with the spectrum management database regarding to the availability.

 spectrumCheck FrequencyRange OPTIONAL

}

--List of spectrum usage information (Profile 3)

ListOfSpecUsageInfo ::= SEQUENCE OF SEQUENCE{

 -- Geolocation information of GCO

 listOfGeolocation SEQUENCE OF Geolocation

}

-----------------------------------------------------------

--Energy detection information

-----------------------------------------------------------

--Energy detection information (Profile 3)

EnergyDetectionInfo ::= SEQUENCE {

 -- Energy detection threshold [dBm]

 energyDetectionTh REAL OPTIONAL,

 -- Energy detection successful rate

 energyDetectionSuccessfulRate REAL OPTIONAL,

 -- Percentage of activated cells within one operator over the management region

 activationRate REAL OPTIONAL,

 ...

}

**-----------------------------------------------------------**

**--Frequency range related data types**

**-----------------------------------------------------------**

--Frequency range

FrequencyRange ::= SEQUENCE {

 --Start frequency [MHz]

 startFreq REAL OPTIONAL,

 --Stop frequency [MHz]

 stopFreq REAL OPTIONAL

}

-- Types of frequency(Profile 3)

TypeOfFrequency ::= ENUMERATED {

 --“Specific” as specified in ETSI EN 301 598

 specific,

 --“Generic” as specified in ETSI EN 301 598

 generic,

 --“Priority Access License (PAL)” as specified in FCC C.F.R Part 96

 pal,

 --“General Authorized Access (GAA)” as specified in FCC C.F.R Part 96

 gaa,

 ...

}

--Aggregated interference control parameters(Profile 3)

AggInterfCtrlParams ::= SEQUENCE{

 --Reference point ID to be protected

 referencePointID INTEGER OPTIONAL,

 --Installation parameters of reference point

 installationParameters InstallationParameters OPTIONAL,

 --Adjacent channel leakage ratio of the GCO [dB]

 aclr REAL OPTIONAL,

 --Protection ratio of the reception to be protected[dB]

 protectionRatio REAL OPTIONAL,

 ...

}

--List of available frequencies

ListOfAvailableFrequencies ::= SEQUENCE OF SEQUENCE {

 --Frequency range

 frequencyRange FrequencyRange OPTIONAL,

 --Transmission power limit [dBm]

 txPowerLimit REAL OPTIONAL,

 --Start time when this frequency range is available

 availableStartTime GeneralizedTime OPTIONAL,

 --Duration during which this frequency range is available [s]

 availableDuration REAL OPTIONAL,

 --Timestamp

 timestamp GeneralizedTime OPTIONAL,

 --Stop time of availability of this frequency range

 availableStopTime GeneralizedTime OPTIONAL,

 --Maximum total bandwidth [Hz]

 maxTotalBandwidth REAL OPTIONAL,

 --Maximum contiguous bandwidth [Hz]

 maxContiguousBandwidth REAL OPTIONAL,

 --Resolution bandwidth [Hz]

 resolutionBandwidth REAL OPTIONAL,

 --Type of available frequency

 typeOfAvailablefrequency TypeOfFrequency OPTIONAL,

 --Location validity [meter]

 locationValidity REAL OPTIONAL,

 --Aggregated interference control parameters

 aggInterfCtrlParams AggInterfCtrlParams OPTIONAL,

 ...

}

--List of supported frequencies

ListOfSupportedFrequencies ::= SEQUENCE OF SEQUENCE {

 -- The frequency borders of each possible sub band or channel

 supportedFrequency FrequencyRange OPTIONAL,

 -- Extra channel configuration

 -- (subchannelization or channel aggregation) supported or not

 extraChannelizationIsSupported BOOLEAN OPTIONAL,

 -- Extra channel configuration description

 extraChannelizationDescription ExtraChannelizationDescription OPTIONAL,

 -- The frequency borders of each possible sub band or channel

 frequencyRange FrequencyRange OPTIONAL,

}

--Extra channelization description

ExtraChannelizationDescription ::= SEQUENCE{

 --Maximum number of non-contiguous channels

 --supported in channel aggregation

 maxNuNonconCH INTEGER OPTIONAL,

 --Maximum number of contiguous channels supported in channel bonding

 maxNuConCH INTEGER OPTIONAL,

 --Min channel raster for fine tuning of frequency [MHz]

 minChRaster REAL OPTIONAL,

 --Maximum supported bandwidth per channel [MHz]

 maxCHBW REAL OPTIONAL,

 --Minimum supported bandwidth per channel [MHz]

 minCHBW REAL OPTIONAL,

 --Resolution for additional channel bandwidth between minCHBW and maxCHBW [MHz]

 resolutionSBW REAL OPTIONAL,

 --Minimum bandwidth within either maxCHBW or minCHBW.

 --Any number or location, which fits within

 --either maxCHBW or minCHBW is allowed [MHz].

 minUnderlayBW REAL OPTIONAL,

 --Offset of the start frequency in the case of maxCHBW [MHz]

 offsetFreqMaxCHBW REAL OPTIONAL,

 --Offset of the start frequency in the case of minCHBW [MHz]

 offsetFreqMinCHBW REAL OPTIONAL,

 --Offset always based on the Primary Channelization or not

 offsetPerPrimaryChannelization BOOLEAN OPTIONAL,

 --Maximum number of channel that GCO can simultaneously use.

 maxNumberOfSimultaneousUse INTEGER OPTIONAL,

 --List of supported bandwidth

 listOfSupportedBandwidth SEQUENCE OF REAL OPTIONAL,

 ...

}

--Parameter type of frequency utilization pattern (Profile 3)

ParameterType ::= ENUMERATED{

 -- Number of frequency usage per time unit

 numberFrequencyUsagePerTimeUnit,

 -- Number of successful usage per time unit

 numberSuccessfulUsagePerTimeUnit,

 -- Number of failed usage per time unit

 numberFailedUsagePerTimeUnit,

 -- Number of frequency usage per time unit and per area unit

 numberFrequencyUsagePerTimeUnitPerAreaUnit,

 -- Number of successful usage per time unit and per area unit

 numberSuccessfulUsagePerTimeUnitPerAreaUnit,

 -- Number of failed usage per time unit and per area unit

 numberFailedUsagePerTimeUnitPerAreaUnit

}

--Frequency utilization pattern (Profile 3)

FreqUtilizationPattern ::= SEQUENCE {

 -- Range of investigated frequency

 frequencyRange FrequencyRange OPTIONAL,

 -- Parameter type of frequency utilization pattern

 parameterType ParameterType OPTIONAL,

 -- Threshold of time duration for successful frequency usage

 timeThresholdForSuccessfulUsage REAL OPTIONAL,

 -- Window start time

 windowStartTime GeneralizedTime OPTIONAL,

 -- Window stop time

 windowStopTime GeneralizedTime OPTIONAL,

 -- Coverage area

 coverageArea CoverageArea OPTIONAL,

 -- Frequency utilization pattern value

 parameterValue INTEGER OPTIONAL

}

--GCO number limit (Profile 3)

CoChGCOLimit ::= SEQUENCE {

 --Management area

 operationRange Range OPTIONAL,

 --Maximum number of GCOs given by the coexistence management service

 maxNumCoChGCOs INTEGER OPTIONAL

}

--List of operating frequencies

ListOfOperatingFrequencies ::= SEQUENCE OF SEQUENCE {

 --Frequency range

 frequencyRange FrequencyRange OPTIONAL,

 --Occupancy if known [fractional value between 0 and 1]

 occupancy REAL OPTIONAL,

 --Priority index of frequencyRange

 freqRankIndex INTEGER OPTIONAL,

 -- Operating EIRP [dBm]

 operatingEirp REAL OPTIONAL,

 --Resolution bandwidth [Hz]

 resolutionBandwidth REAL OPTIONAL,

 --Type of operating frequency

 typeOfOperatingFrequency TypeOfFrequency OPTIONAL,

 --Energy detection information

 energyDetectionInfo EnergyDetectionInfo OPTIONAL,

 --Modulation parameters

 modulationParameters ModulationParameters OPTIONAL,

 --Demodulation procedure

 sicDemodulationProcedure SICDemodulationProcedure OPTIONAL,

 --Interference leakage weighting factor

 intLeakageFactor REAL OPTIONAL,

 --List of reference point locations.

 listOfSpecUsageInfoOfRefPoints ListOfSpecUsageInfo OPTIONAL,

 --List of co-channel neighbor GCOs location

 listOfSpecUsageInfoOfNeightborGCOs ListOfSpecUsageInfo OPTIONAL,

 --Co-channel GCO limit

 coChGCOLimit CoChGCOLimit OPTIONAL,

 --Frequency utilization pattern parameter

 freqUtilizationPattern FreqUtilizationPattern OPTIONAL,

 ...

}

**-----------------------------------------------------------**

**--Available channel numbers**

**-----------------------------------------------------------**

ConstOfChUseID ::= ENUMERATED {

 regulationMaxTxPower,

 regulationMaxAntGain,

 regulationMaxAntHeight,

 regulationTVDBUpdateTime,

 outOfBandEmissionLimit,

 ...

}

ConstOfChUseValue ::= CHOICE {

 --Maximum transmit power allowed by regulations [dBm]

 regulationMaxTxPower REAL,

 --Maximum antenna gain allowed by regulation [dBi]

 regulationMaxAntMaxGain REAL,

 --Maximum antenna height above ground allowed by regulation [m]

 regulationAntMaxHeight REAL,

 --WSO location update time required by regulation [s]

 regulationTVDBUpdateTime REAL,

 --Out of band emission power density limit [dBm/MHz]

 outOfBandEmissionLimit REAL,

 ...

}

ConstOfChUses ::= SEQUENCE OF SEQUENCE {

 constOfChUseID ConstOfChUseID OPTIONAL,

 constOfChUseValue ConstOfChUseValue OPTIONAL

}

ListOfAvailableChNumbers ::= SEQUENCE OF SEQUENCE {

 chNumber INTEGER OPTIONAL,

 availableStartTime GeneralizedTime OPTIONAL,

 --Duration of availability [s]

 availableDuration REAL OPTIONAL,

 constOfChUses ConstOfChUses OPTIONAL

}

**-----------------------------------------------------------**

**--Operating channel numbers**

**-----------------------------------------------------------**

ListOfOperatingChNumbers ::= SEQUENCE OF SEQUENCE {

 chNumber INTEGER OPTIONAL,

 --Occupancy [fractional value between 0 and 1]

 occupancy REAL OPTIONAL

}

**-----------------------------------------------------------**

**--Required resource**

**-----------------------------------------------------------**

--Required resource

RequiredResource ::= SEQUENCE OF SEQUENCE {

 --Required bandwidth [MHz]

 requiredBandwidth REAL OPTIONAL,

 --Expected occupancy if known [fractional value between 0 and 1]

 occupancy REAL OPTIONAL

}

**-----------------------------------------------------------**

**--Operation code for registration**

**-----------------------------------------------------------**

--Operation code for registration

OperationCode ::= ENUMERATED {

 --New registration

 new,

 --Update of registration information

 update,

 --Deregistration

 delete,

 --Modification of registration information

 modify,

 --Remove

 remove,

 --Inform the spectrum usage release

 release

}

**-----------------------------------------------------------**

**--Measurement capability**

**-----------------------------------------------------------**

MeasurementCapability ::= ENUMERATED {

 energyDetection,

 featureDetection,

 ...

}

**-----------------------------------------------------------**

**--Reconfiguration related data types**

**-----------------------------------------------------------**

--Transmission schedule

TxSchedule ::= SEQUENCE {

 --Schedule start time

 scheduleStartTime GeneralizedTime OPTIONAL,

 --Schedule frame duration [s]

 scheduleFrameDuration REAL OPTIONAL,

 --Number of schedule frames

 numberOfFrames INTEGER OPTIONAL,

 --Transmission start time within a schedule frame [s]

 transmissionStartTime REAL OPTIONAL,

 --Transmission duration within a schedule frame [s]

 transmissionDuration REAL OPTIONAL

}

**-----------------------------------------------------------**

**--CM registration**

**-----------------------------------------------------------**

--CM registration

CMRegistration ::= SEQUENCE {

 --CM IP address

 ipAddress OCTET STRING OPTIONAL,

 --CM port number

 portNumber INTEGER OPTIONAL

}

--List of WSO for registration

ListOfWSORegistrations ::= SEQUENCE OF SEQUENCE {

 --New registration, registration update or deregistration

 operationCode OperationCode OPTIONAL,

 --WSO ID

 wsoID OCTET STRING OPTIONAL,

 --Network technology

 networkTechnology NetworkTechnology OPTIONAL,

 --Location

 geolocation Geolocation OPTIONAL,

 --Coverage area

 coverageArea CoverageArea OPTIONAL,

 -- Mobility information

 mobilityInformation MobilityInformation OPTIONAL,

 --Installation parameters

 installationParameters InstallationParameters OPTIONAL,

 --List of available frequencies

 listOfAvailableFrequencies ListOfAvailableFrequencies OPTIONAL,

 -- Operating frequency if available

 operatingFrequency FrequencyRange OPTIONAL,

 -- Upper limit of transmission power level in its operating frequency [dBm]

 txPowerLimit REAL OPTIONAL,

 --Maximum number of controllable WSO

 maximumNumberOfControllableWSO INTEGER OPTIONAL

}

--Set of detailed contact information

Contact ::= CHOICE {

 --Phone number

 phoneNumber NumericString,

 --E-mail address

 email UTF8String,

 ...

}

--User contact information

UserContactInformation ::= SEQUENCE {

 --User name

 username OCTET STRING,

 --Contact information

 contact SEQUENCE OF Contact

}

--GCO device type (Profile 3)

GCOType ::= ENUMERATED {

 --“AP” (Access Point)

 wlanAP,

 --“STA” (Station)

 wlanSTA,

 --eNB

 eNodeB,

 --UE

 ue,

 --“Master” for TVBD/WSD

 master,

 --“Slave” for TVBD/WSD

 slave,

 --“CBSD” (Citizens Broadband Radio Service Device)

 cbsd,

 --“EUD” (End User Device)

 eud,

 ...

}

--Emission class (Profile 3)

EmissionClass ::= ENUMERATED {

 --“Class 1” as specified in ETSI EN 301 598

 class1,

 --“Class 2” as specified in ETSI EN 301 598

 class2,

 --“Class 3” as specified in ETSI EN 301 598

 class3,

 --“Class 4” as specified in ETSI EN 301 598

 class4,

 --“Class 5” as specified in ETSI EN 301 598

 class5,

 ...

}

--GCO Descriptor (Profile 3)

GCODescriptor ::= SEQUENCE {

 --Network type

 networkType NetworkType OPTIONAL,

 --Emission class

 emissionClass EmissionClass OPTIONAL,

 --GCO type

 gcoType GCOType OPTIONAL,

 --Network technology

 networkTechnology NetworkTechnology OPTIONAL,

 --Additional network technologies of GCO

 addNetworkTechnologies SEQUENCE OF NetworkTechnology OPTIONAL,

 --Regulatory ID of GCO

 gcoRegulatoryID OCTET STRING OPTIONAL,

 --Call sign

 callSign OCTET STRING OPTIONAL,

 --Serial number

 serialNumber OCTET STRING OPTIONAL,

 --User contact information

 userContactInformation UserContactInformation OPTIONAL,

 --Sensing capability

 sensingCapability BOOLEAN OPTIONAL,

 ...

}

-----------------------------------------------------------

--GraphEdge

-----------------------------------------------------------

--Graph Edge parameters (Profile 3)

GraphEdge ::= SEQUENCE {

 --Head vertex of edge

 head OCTET STRING,

 --tail vertex of edge

 tail OCTET STRING,

 --weight of the edge

 weight REAL

}

-----------------------------------------------------------

--Graph of interference relationship

-----------------------------------------------------------

--Graph representation of interference relationship among GCOs (Profile 3)

InterferenceRelationshipGraph ::= SEQUENCE {

 --Graph Edge

 edge GraphEdge,

 ...

}

--List of GCOs for registration

ListOfGCORegistrations ::= SEQUENCE OF SEQUENCE {

 --New registration, registration update or deregistration

 operationCode OperationCode OPTIONAL,

 --GCO ID

 gcoID OCTET STRING OPTIONAL,

 --Network ID

 networkID OCTET STRING OPTIONAL,

 --GCO Descriptor

 gcoDescriptor GCODescriptor OPTIONAL,

 --Coverage area

 coverageArea CoverageArea OPTIONAL,

 --Installation parameters

 installationParameters InstallationParameters OPTIONAL,

 --List of available frequencies

 listOfAvailableFrequencies ListOfAvailableFrequencies OPTIONAL,

 -- List of operating frequencies

 listOfOperatingFrequencies ListOfOperatingFrequencies OPTIONAL,

 -- operation region

 operationRegion Range OPTIONAL,

 --Spectrum transition capability

 spectrumTransitionCapability BOOLEAN OPTIONAL,

 --Maximum number of controllable GCO

 maxNumberOfControllableGCO INTEGER OPTIONAL,

 --List of desired performance

 listOfDesiredPerformances ListOfDesiredPerformances OPTIONAL,

 --GCO IDs that are included in interference set

 interferenceSet SEQUENCE OF OCTET STRING OPTIONAL,

 --Graph information to represent interference relationship

 interferenceGraph InterferenceRelationshipGraph OPTIONAL,

 ...

}

--CE registration

CERegistration ::= SEQUENCE OF SEQUENCE{

 --CE ID

 ceID CxID OPTIONAL,

 -- List of WSO registration

 listOfWSORegistration ListOfWSORegistrations OPTIONAL,

 -- List of GCO registration

 listOfGCORegistrations ListOfGCORegistrations OPTIONAL

}

**-----------------------------------------------------------**

**--Coexistence report**

**-----------------------------------------------------------**

-- List of recommended operation frequencies (Profile 3)

ListOfRecOperationFrequencies ::= SEQUENCE OF SEQUENCE {

 --Range of recommended operation frequency

 frequencyRange FrequencyRange OPTIONAL,

 --Recommended maximum EIRP [dBm]

 recommendedMaxEirp REAL OPTIONAL,

 --Start time

 availableStartTime GeneralizedTime OPTIONAL,

 --Stop time

 availableStopTime GeneralizedTime OPTIONAL,

 --Resolution bandwidth [Hz]

 resolutionBandwidth REAL OPTIONAL,

 --location validity [meter]

 locationValidity REAL OPTIONAL,

 ...

}

--Coexistence report

CoexistenceReport ::= SEQUENCE OF SEQUENCE {

 --Network ID

 networkID OCTET STRING OPTIONAL,

 --Network Technology

 networkTechnology NetworkTechnology OPTIONAL,

 --List of the identification numbers of operating channels

 listOfOperatingChNumbers ListOfOperatingChNumbers OPTIONAL,

 --GCO ID

 gcoID OCTET STRING OPTIONAL,

 --List of recommended operation frequencies (Only in Profile 3)

 listOfRecOperationFrequencies ListOfRecOperationFrequencies OPTIONAL

}

--List of coexistence reports (Profile 3)

ListOfCoexistenceReports ::= SEQUENCE OF SEQUENCE {

 --Region information that the coexistence report is valid.

 region Region OPTIONAL,

 --List of operating frequencies

 listOfOperatingFrequencies ListOfOperatingFrequencies OPTIONAL,

 --List of recommended information on operation frequencies

 listOfRecOperationFrequencies ListOfRecOperationFrequencies OPTIONAL

}

--Channel priority information

ChannelPriority ::= SEQUENCE OF SEQUENCE {

 channelNumber INTEGER OPTIONAL,

 priority INTEGER OPTIONAL

}

**-----------------------------------------------------------**

**--Coexistence set information related data types**

**-----------------------------------------------------------**

--Interference direction

InterferenceDirection ::= ENUMERATED {

 --Subject WSO creates interference to neighbor WSO

 source,

 --Neighbor WSO creates interference to subject WSO

 victim,

 --Both subject WSO and neighbor WSO create interference to each other

 mutual

}

--Network geometry class

NetworkGeometryClass ::= ENUMERATED {

 --Class#1 network geometry

 class1,

 --Class#2 network geometry

 class2,

 --Class#3 network geometry

 class3,

 --Class#4 network geometry

 class4

}

--List of neighbor WSOs

ListOfNeighborWSOs ::= SEQUENCE OF SEQUENCE {

 --Neighbor WSO ID

 wsoID OCTET STRING OPTIONAL,

 --Neighbor WSO network technology

 networkTechnology NetworkTechnology OPTIONAL,

 --Interference direction

 interferenceDirection InterferenceDirection OPTIONAL,

 --Network geometry classification

 networkGeometryClass NetworkGeometryClass OPTIONAL,

 --Normalized distance to subject WSO [fractional value]

 distance REAL OPTIONAL,

 --List of operating frequencies

 --Not used in CoexistenceSetInformationAnnouncement

 --Used in CoexistenceReportAnnouncement and CxMediaCoexistenceReportIndication

 listOfOperatingFrequencies ListOfOperatingFrequencies OPTIONAL,

 listOfAvailableFrequencies ListOfAvailableFrequencies OPTIONAL

}

--List of neighbor GCOs

ListOfNeighborGCOs ::= SEQUENCE OF SEQUENCE {

 --Neighbor GCO ID

 gcoID OCTET STRING OPTIONAL,

 --GCO descriptor

 gcoDescriptor GCODescriptor OPTIONAL,

 --Network geometry classification

 networkGeometryClass NetworkGeometryClass OPTIONAL,

 --List of operating frequencies

 listOfOperatingFrequencies ListOfOperatingFrequencies OPTIONAL,

 --List of available frequencies

 listOfAvailableFrequencies ListOfAvailableFrequencies OPTIONAL

}

--List of master CM candidate

ListOfMasterCMCandidates ::= SEQUENCE OF SEQUENCE {

 --ID of Master CM candidate

 cmID CxID OPTIONAL,

 --IP address of CM

 ipAddress OCTET STRING OPTIONAL,

 --Port number

 portNumber INTEGER OPTIONAL

}

--List of neighbor CEs

ListOfNeighborCEs ::= SEQUENCE OF SEQUENCE {

 --Neighbor CE ID

 ceID CxID OPTIONAL,

 --List of neighbor WSOs

 listOfNeighborWSOs ListOfNeighborWSOs OPTIONAL,

 --List of neighbor GCOs

 listOfNeighborGCOs ListOfNeighborGCOs OPTIONAL

}

--List of CEs

ListOfCEs ::= SEQUENCE OF CxID

--List of neighbor CMs

ListOfNeighborCMs ::= SEQUENCE OF SEQUENCE {

 --Neighbor CM ID

 neighborCMID CxID OPTIONAL,

 --Neighbor CM ID

 cmID CxID OPTIONAL,

 --List of neighbor CEs

 listOfNeighborCEs ListOfNeighborCEs OPTIONAL,

 --Neighbor CM profile

 cmProfile EntityProfile OPTIONAL,

 --List of coexistence set element

 listOfCoexSetElement ListOfCoexSetElement OPTIONAL

}

--List of available frequencies of the subject WSO

ListOfSubjectWSOAvailableFrequencies ::= SEQUENCE OF SEQUENCE {

 --Frequency range

 frequencyRange FrequencyRange OPTIONAL,

 --List of neighbor CMs

 listOfNeighborCMs ListOfNeighborCMs OPTIONAL

}

--List of GCOs

ListOfGCOs ::= SEQUENCE {

 --GCO ID

 gcoID OCTET STRING OPTIONAL,

 --GCO descriptor

 gcoDescriptor GCODescriptor OPTIONAL,

 --Installation

 installationParameters InstallationParameters OPTIONAL,

}

--List of subject WSOs

ListOfSubjectWSOs ::= SEQUENCE OF SEQUENCE {

 --Subject WSO ID

 wsoID OCTET STRING OPTIONAL,

 --List of available frequencies of the subject WSO

 listOfSubjectWSOAvailableFrequencies ListOfSubjectWSOAvailableFrequencies OPTIONAL

}

--List of subject CEs

ListOfSubjectCEs ::= SEQUENCE OF SEQUENCE {

 --Subject CE ID

 ceID CxID OPTIONAL,

 --List of subject WSOs

 listOfSubjectWSOs ListOfSubjectWSOs OPTIONAL

}

--List of neighbor CMs transport information

ListOfNeighborCMsTransport ::= SEQUENCE OF SEQUENCE {

 --Neighbor CM ID

 cmID CxID OPTIONAL,

 --Neighbor CM profile

 cmProfile EntityProfile OPTIONAL,

 -- Neighbor CM IP address

 ipAddress OCTET STRING OPTIONAL,

 -- Neighbor CM port number

 portNumber INTEGER OPTIONAL

}

**-----------------------------------------------------------**

**--Coexistence set information**

**-----------------------------------------------------------**

ListOfCoexSetElement ::= SEQUENCE OF SEQUENCE {

 networkID OCTET STRING OPTIONAL,

 networkTechnology NetworkTechnology OPTIONAL

}

**-----------------------------------------------------------**

**--Coexistence set element information related data types**

**-----------------------------------------------------------**

--List of neighbor CM WSOs

ListOfNeighborCMWSOs ::= SEQUENCE OF SEQUENCE {

 --WSO ID

 wsoID OCTET STRING OPTIONAL,

 --List of available frequencies

 listOfAvailableFrequencies ListOfAvailableFrequencies OPTIONAL,

 --List of operating frequencies

 listOfOperatingFrequencies ListOfOperatingFrequencies OPTIONAL,

 --Network geometry classification

 networkGeometryClass NetworkGeometryClass OPTIONAL

}

**-----------------------------------------------------------**

**--Coexistence set element reconfiguration related data types**

**-----------------------------------------------------------**

--List of WSOs

ReconfigListOfWSOs ::= SEQUENCE OF SEQUENCE {

 --WSO ID

 wsoID OCTET STRING OPTIONAL,

 --Potential new operating frequency

 newOperatingFrequency FrequencyRange OPTIONAL,

 --Additionally operable network technology

 addNetworkTechnology NetworkTechnology OPTIONAL

}

--Reconfiguration list of CEs

ReconfigListOfCEs ::= SEQUENCE OF SEQUENCE {

 --CE ID

 ceID CxID OPTIONAL,

 --List of WSOs

 reconfigListOfWSOs ReconfigListOfWSOs OPTIONAL

}

**-----------------------------------------------------------**

**--Channel classification**

**-----------------------------------------------------------**

--Information on operating channel

OperatingChannelInfo ::= SEQUENCE {

 --Identification number of operating channel number

 operatingChannelNumber INTEGER OPTIONAL,

 --List of network ID

 listOfNetworkID SEQUENCE OF OCTET STRING OPTIONAL,

 ...

}

--Channel classification information

ChClassInfo ::= SEQUENCE {

 availableChannelList SEQUENCE OF INTEGER OPTIONAL,

 restrictedChannelList SEQUENCE OF INTEGER OPTIONAL,

 protectedChannelList SEQUENCE OF INTEGER OPTIONAL,

 unclassifiedChannelList SEQUENCE OF INTEGER OPTIONAL,

 operatingChannelList SEQUENCE OF OperatingChannelInfo OPTIONAL,

 coexistenceChannelList SEQUENCE OF OperatingChannelInfo OPTIONAL,

 ...

}

--Channel classification information list

ChClassInfoList ::= SEQUENCE OF SEQUENCE {

 networkID OCTET STRING OPTIONAL,

 chClassInfo ChClassInfo OPTIONAL

}

**-----------------------------------------------------------**

**--Failed parameters**

**-----------------------------------------------------------**

FailedParameterID ::= ENUMERATED {

 listOfoperatingChNumber,

 txPowerLimit,

 channelIsShared,

 txSchedule

}

FailedParameterValue ::= CHOICE {

 listOfoperatingChNumber SEQUENCE OF INTEGER,

 --Transmit power limit [dBm]

 txPowerLimit REAL,

 channelIsShared BOOLEAN,

 txSchedule TxSchedule

}

FailedParameters ::= SEQUENCE OF SEQUENCE {

 failedParameterID FailedParameterID OPTIONAL,

 failedParameterValue FailedParameterValue OPTIONAL

}

**-----------------------------------------------------------**

**--Event indication**

**-----------------------------------------------------------**

EventDescr ::= ENUMERATED{

 sinrThresholdReached,

 qosDegradation,

 ...

}

EventParams ::= SEQUENCE {

 eventDescr EventDescr OPTIONAL

}

**-----------------------------------------------------------**

**--Information Acquiring**

**-----------------------------------------------------------**

ReqInfoDescr ::= SEQUENCE OF ENUMERATED {

 sinr,

 desiredBandwidth,

 desiredOccupancy,

 desiredQoS,

 desiredCoverage,

 channelNumber,

 subscribedService,

 interferenceLevel,

 fairness,

 threshold,

 mobilityInformation,

 ...

}

ReqInfoValue ::= SEQUENCE OF SEQUENCE {

 reqInfoDescr ReqInfoDescr OPTIONAL,

 reqInfoValue CHOICE {

 --SINR value [dB]

 sinrValue [1] REAL,

 --Desired bandwidth value [MHz]

 desiredBandwidthValue [2] REAL,

 --Desired occupancy value

 desiredOccupancyValue [3] REAL,

 --Desired QoS value [fractional value between 0 and 1]

 desiredQoSValue [4] REAL,

 --Desired coverage value [m]

 desiredCoverageValue [5] REAL,

 channelNumberValue [6] REAL,

 subscribedServiceValue SubscribedService,

 --Interference level value [dBm]

 interferenceLevelValue [7] REAL,

 --Fairness value [fractional value between 0 and 1]

 fairnessValue [8] REAL,

 --Threshold value [factional value between 0 to 1]

 thresholdValue [9] REAL,

 mobilityInformation [10] MobilityInformation,

 ...

 }

}

**-----------------------------------------------------------**

**--Negotiation**

**-----------------------------------------------------------**

--Negotiation status

NegotiationStatus ::= SEQUENCE {

 negotiationSuccess BOOLEAN OPTIONAL,

 negotiationFailure BOOLEAN OPTIONAL,

 underNegotiation BOOLEAN OPTIONAL,

 ...

}

--Start and end time

StartEndTime ::= SEQUENCE {

 --Start time [s]

 startTime REAL OPTIONAL,

 --End time [s]

 endTime REAL OPTIONAL

}

--Time sharing unit information

TimeSharingUnitInfo ::= SEQUENCE {

 referenceTime GeneralizedTime OPTIONAL,

 windowTime StartEndTime OPTIONAL,

 slotTime StartEndTime OPTIONAL,

 ...

}

--Negotiation information

NegotiationInformation ::= SEQUENCE {

 mode BOOLEAN OPTIONAL,

 listOfChNumber SEQUENCE OF INTEGER OPTIONAL,

 timeSharingUnitInfo TimeSharingUnitInfo OPTIONAL,

 slotTimePosition StartEndTime OPTIONAL,

 numberOfSlots INTEGER OPTIONAL,

 disallowedSlotTimePosition StartEndTime OPTIONAL,

 --List of contention numbers [factional value between 0 to 1]

 listOfContentionNumbers SEQUENCE OF REAL OPTIONAL,

 ...

}

--List of winner CM ID

ListOfWinnerCMID ::= SEQUENCE OF CxID

--List of slot time position [s]

ListOfSlotTimePosition ::= SEQUENCE OF REAL

**-----------------------------------------------------------**

**--Measurement**

**-----------------------------------------------------------**

MeasurementSchedule ::= SEQUENCE {

 measStartTime GeneralizedTime OPTIONAL,

 numberOfMeasurements INTEGER OPTIONAL,

 --Time between measurements [s]

 timeBetweenMeasurements REAL OPTIONAL

}

MeasurementFreq ::= CHOICE {

 chan SEQUENCE OF INTEGER,

 freq FrequencyRange

}

MeasurementType ::= ENUMERATED {

 interferenceLevel,

 throughput

}

MeasurementDescription ::= SEQUENCE {

 measType MeasurementType OPTIONAL,

 measSchedule MeasurementSchedule OPTIONAL,

 measFreq MeasurementFreq OPTIONAL

}

MeasurementReport ::= CHOICE {

 --Interference level value [dBm]

 interferenceLevelValue REAL,

 --Throughput value [Mb/s]

 throughputValue REAL,

 ...

}

MeasurementResult ::= SEQUENCE {

 measurementDescription MeasurementDescription OPTIONAL,

 measurementReport MeasurementReport OPTIONAL

}

-----------------------------------------------------------

--Mobility Information

-----------------------------------------------------------

MobilityInformation ::= CHOICE {

 --Maximum speed [km/h]

 maxSpeed REAL,

 --Speed information

 speedInformation SpeedInformation,

 --Route information

 routeInformation RouteInformation

}

SpeedInformation ::= SEQUENCE {

 --WSO speed [km/h]

 wsoSpeed REAL OPTIONAL,

 --WSO direction [degree]

 wsoDirection REAL OPTIONAL,

 --GCO speed [km/h]

 gcoSpeed REAL OPTIONAL,

 --GCO direction [degree]

 gcoDirection REAL OPTIONAL

}

RouteInformation ::= SEQUENCE {

 plannedRoute SEQUENCE OF Geolocation OPTIONAL,

 plannedTime SEQUENCE OF GeneralizedTime OPTIONAL

}

**-----------------------------------------------------------**

**--Entity profile**

**-----------------------------------------------------------**

--Entity profile

EntityProfile ::= ENUMERATED {

 --Profile 1

 profile1,

 --Profile 2

 profile2,

 --Profile 3

 profile3

}

-----------------------------------------------------------

--Spectrum allocation Supporting Information

-----------------------------------------------------------

--Spectrum allocation supporting information (Profile 3)

SpecAllocationSupportingInfo ::= SEQUENCE {

 --The value indicating the interference aggregation effect of a pair of a target GCO and an existing GCO

 spectrumAllocationCoefficient REAL,

 --existing GCO spectrum allocation information gives the spectrum allocation of the GCO as in a given pair

 gcoSpecAllocation ListOfOperatingFrequencies

}

----------------------------------------------------------

--Candidate serving CM information for Moving GCO

----------------------------------------------------------

--List of serving CM (Profile 3)

ListOfCandidateServingCMs ::= SEQUENCE OF SEQUENCE{

 -- ID of Candidate serving CM

 cmID CxID OPTIONAL,

 -- Estimated arrival time

 arrivalTime GeneralizedTime OPTIONAL,

 -- Estimated residence duration [s]

 residenceDuration REAL OPTIONAL,

 -- Resource serving priority

 selectionPriorityLevel INTEGER OPTIONAL

}

--List of moving GCOs (Profile 3)

ListOfMovingGCOs ::= SEQUENCE OF SEQUENCE{

 -- GCO ID

 gcoID OCTET STRING OPTIONAL,

 -- Estimated arrival time

 arrivalTime GeneralizedTime OPTIONAL,

 -- Estimated residence duration [s]

 residenceDuration REAL OPTIONAL,

 -- Desired Bandwidth [MHz]

 desiredBandwidth REAL OPTIONAL

}

--List of candidate served GCOs (Profile 3)

ListOfCandidateServedGCOs ::= SEQUENCE OF SEQUENCE{

 -- GCO ID

 gcoID OCTET STRING OPTIONAL,

 -- Mobility information

 mobilityInformation MobilityInformation OPTIONAL,

 -- Desired Bandwidth [MHz]

 desiredBandwidth REAL OPTIONAL

}

--List of estimated available bandwidth (Profile 3)

ListOfEstimatedAvailableBandwidth ::= SEQUENCE OF SEQUENCE{

 -- GCO ID

 gcoID OCTET STRING OPTIONAL,

 -- Estimated Available Bandwidth [MHz]

 estimatedAvailableBandwidth REAL OPTIONAL

}

END

**------------------------------------------- End of Changes --------------------------------------------**

**------------------------------------------- Proposed Changes ---------------------------------------**

***Delete all the contents of A.2 in 802.19.1a (all the contents are included in above text)***

**------------------------------------------- End of Changes --------------------------------------------**