Change ID: 5.1-39

TACAN component limitation

Summary

Because the azimuth and distance signals of a TACAN can have different usage areas and different operational status, it is proposed to add a "signalType" attribute in the RadioFrequencyArea and NavaidOperationalStatus classes.

Background

A TACAN provides both angle and distance indications. As the two signals (azimuth and distance) come from the same equipment, it has not been considered appropriate to split the TACAN into two distinct navaid components. Therefore, TACAN facilities are modelled as a single (indivisible) kind of NavaidEquipment .

Rationale for the change

TACAN component limitations

The RadioFrequencyArea class is used to model navaid signal limitations, expressed as angular sectors. Any individual NavaidEquipment can be affected.

The two TACAN signals can have different usage areas. The previous version of the model (4.5) had the possibility to indicate which of the two components is affected. This is not supported AIXM 5.0 and it is proposed to be re-introduced. The proposed solution is to introduce a "signalType" attribute in the RadioFrequencyArea class with values: Azimuth, Distance, Beam (for ILS), Voice (for frequency), DataLink (if available), etc. Primarily, this would be used for discriminating the TACAN signal type that is affected. However, the list of values would cover all the other navaid equipment types.

TACAN component unserviceable

A similar problem exists when only one of the two TACAN components is unserviceable. The operationalStatus attribute of the NavaidEquipment applies to the whole Navaid and it is not possible to indicate "azimuth" or "distance". The proposed solution is to add a similar "signalType" into the new NavaidOperationalStatus class (see AIXM Change 5.1-35), which shall allow us to indicate the component that is affected by the operationalStatus.

Change proposal details

In the RadioFrequencyArea class, add a new attribute:
- name = signalType
- definition = " *The type of signal that is affected by the usage limitation.*"
- data type = CodeRadioSignalType

In the NavaidOperationalStatus class, add a new attribute:
- name = signalType
- definition = " *The type of signal that is affected by the operational status*"
- data type = CodeRadioSignalType

Insert a new "enumeration" data type - CodeRadioSignalType:

- definition = " *A coded indicator for the type of information transmitted by a navaid or other radio emission source.*"
- list of values:
    - AZIMUTH = " *The signal supports the provision/calculation of horizontal angle information*"
    - DISTANCE = " *The signal supports the provision/calculation of linear separation information*"
    - BEAM = " *The signal provides a directional guidance, in the horizontal or vertical planes*"
    - VOICE = " *The signal provides a carrier for voice information*"
    - DATALINK = " *The signal provides a carrier for data*"
    - OTHER = " *Other*"