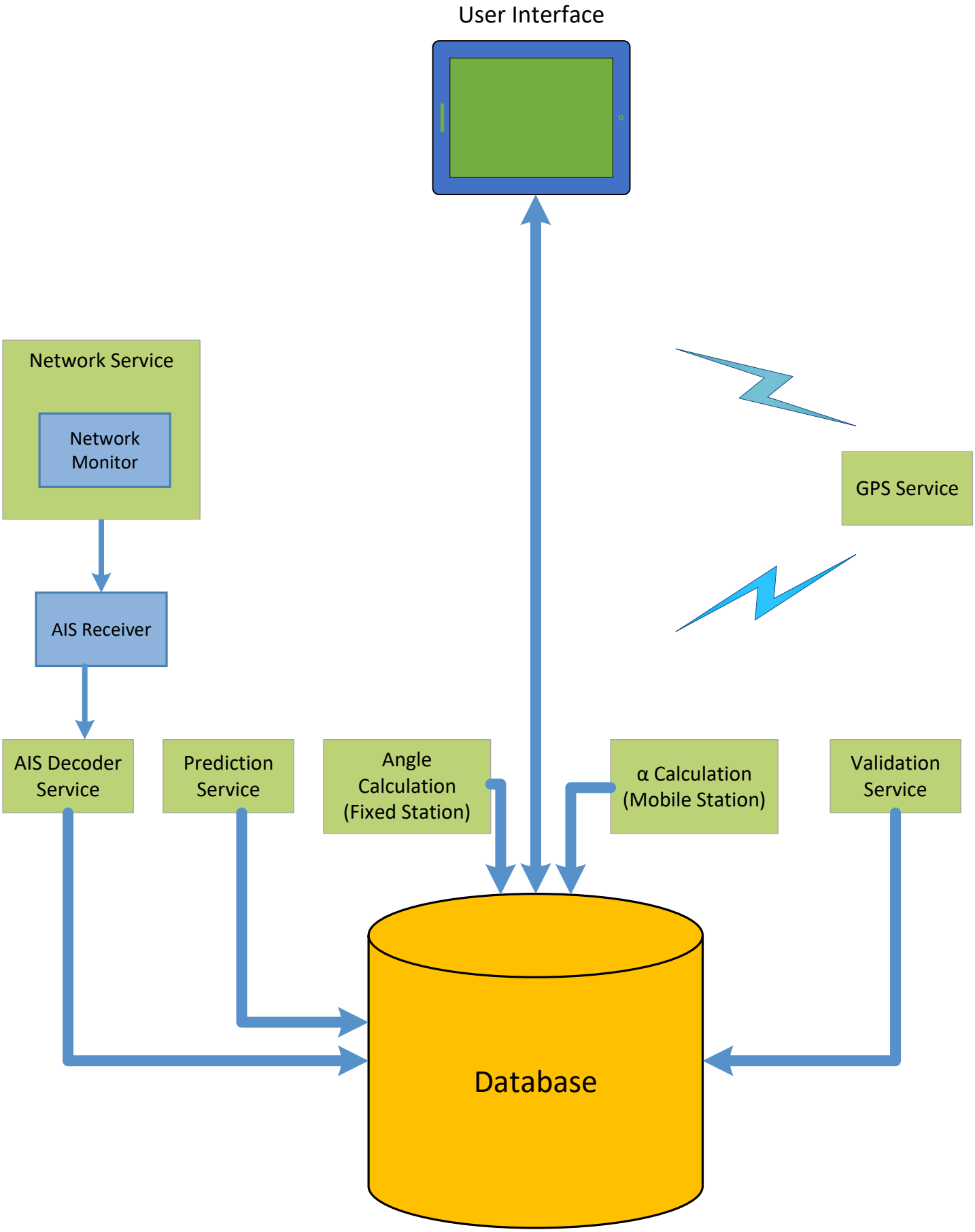
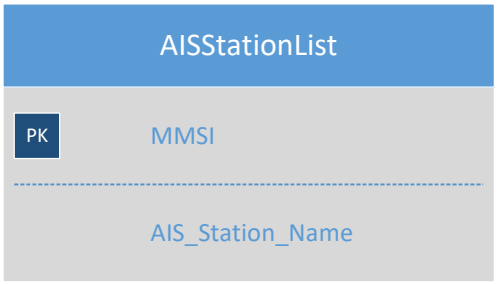
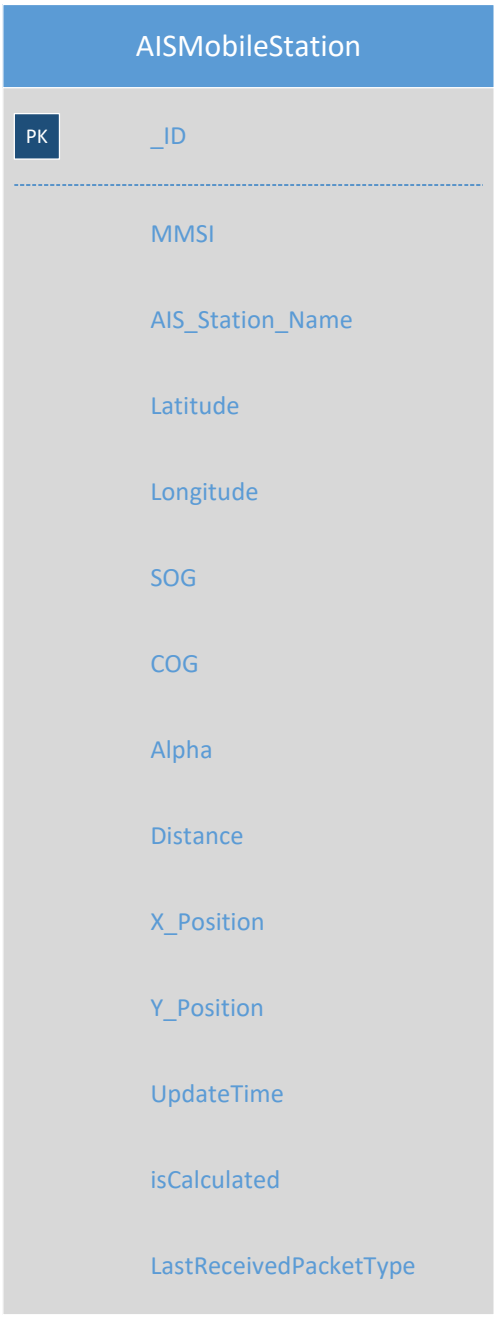
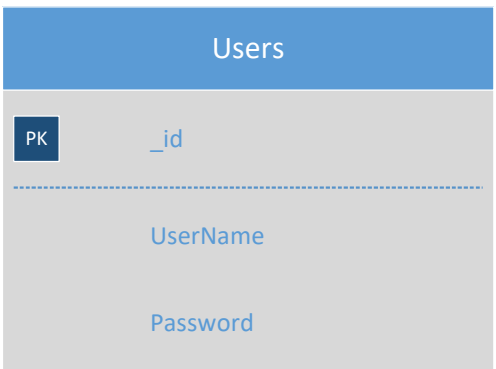
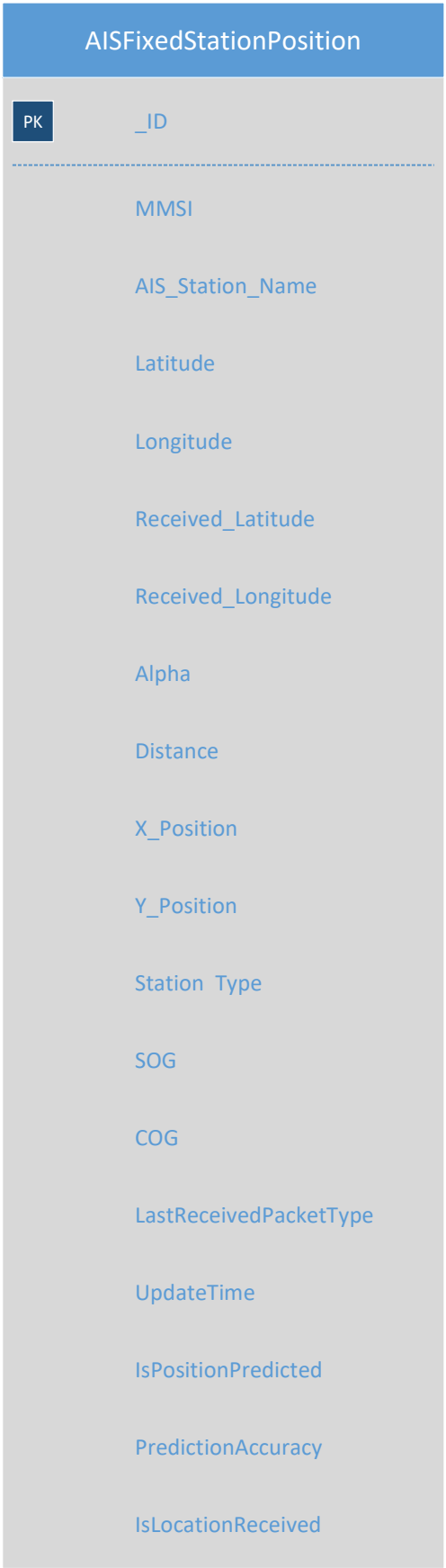
App Architecture

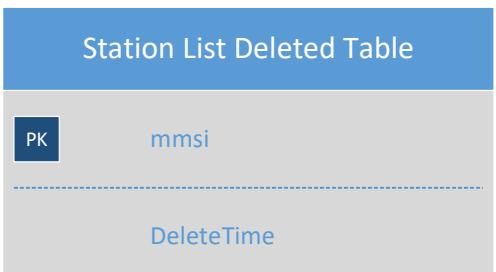



AISStationList
PK
MMSI
AIS_Station_Name

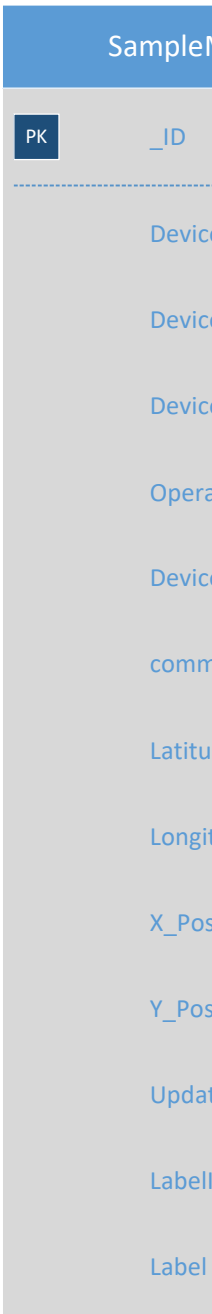

AISMobileStation
PK
_ID
MMSI
AIS_Station_Name
Latitude
Longitude
SOG
COG
Alpha
Distance
X_Position
Y_Position
UpdateTime
isCalculated
LastReceivedPacketType

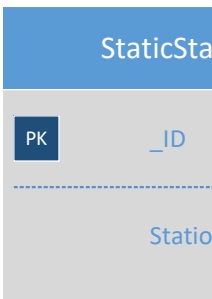

Users
PK
_id
UserName
Password

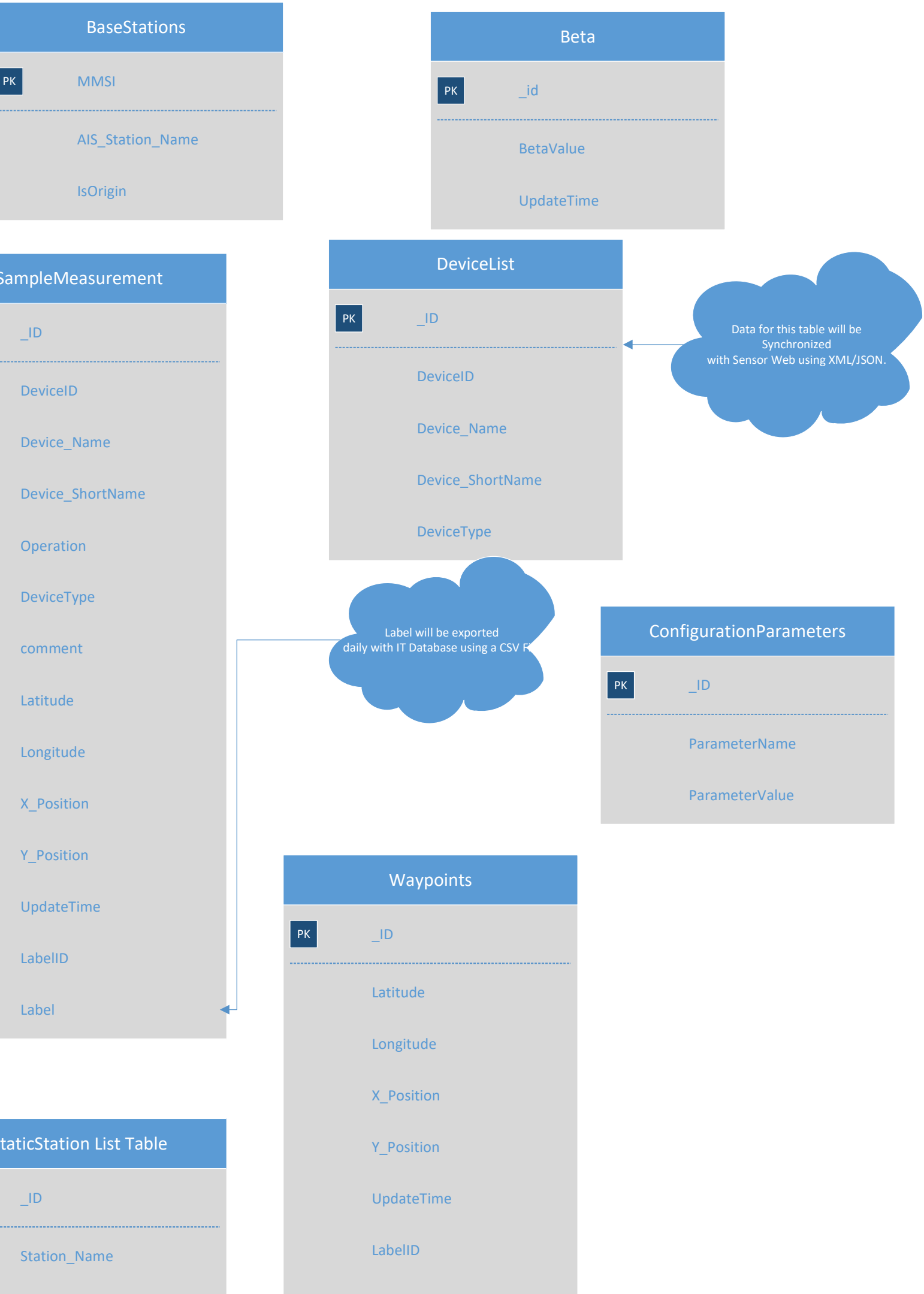

AISFixedStationPosition
PK
_ID
MMSI
AIS_Station_Name
Latitude
Longitude
Received_Latitude
Received_Longitude
Alpha
Distance
X_Position
Y_Position
Station Type
SOG
COG
LastReceivedPacketType
UpdateTime
IsPositionPredicted
PredictionAccuracy
IsLocationReceived

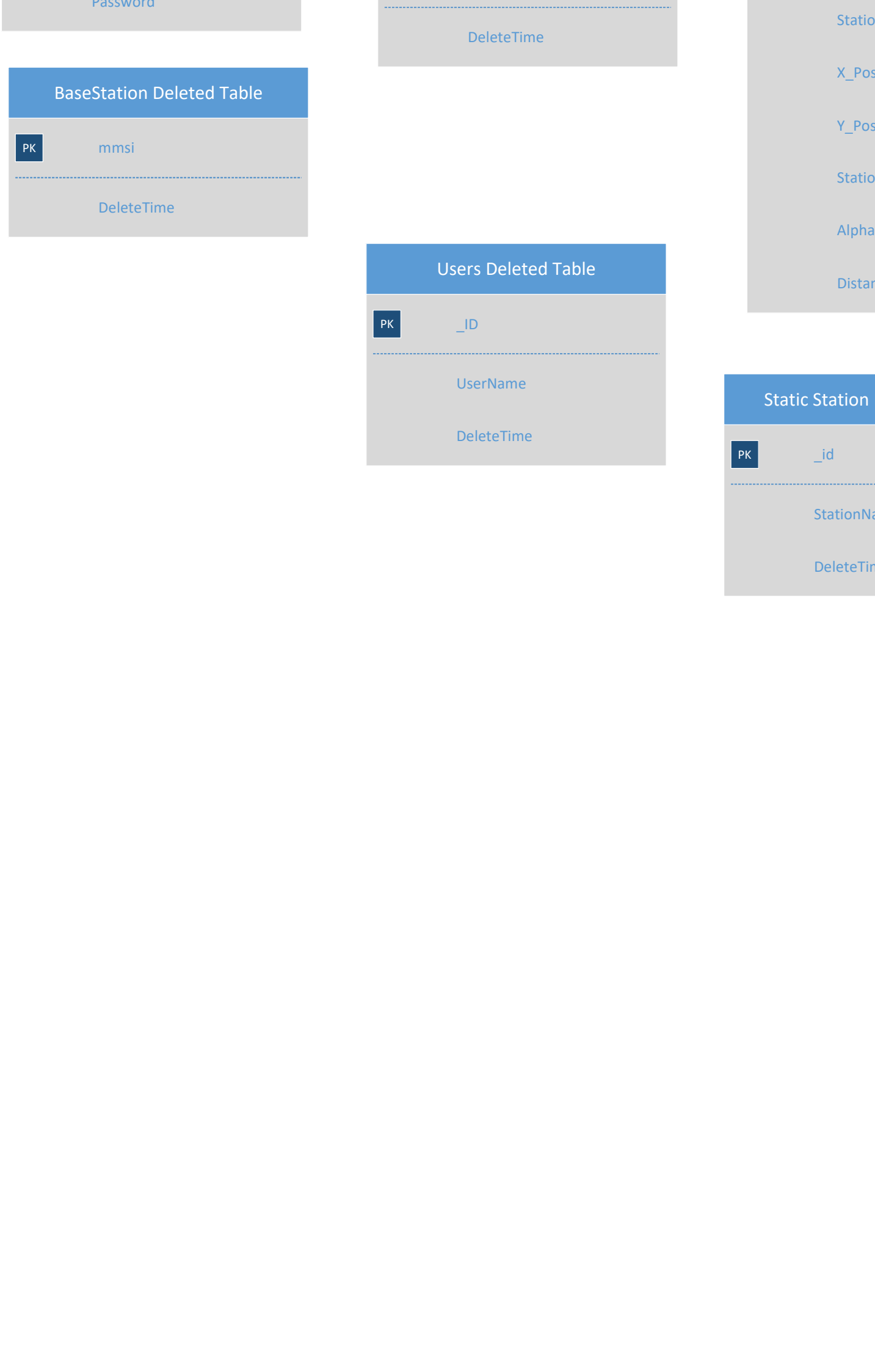

Station List Deleted Table
PK
mmsi
DeleteTime

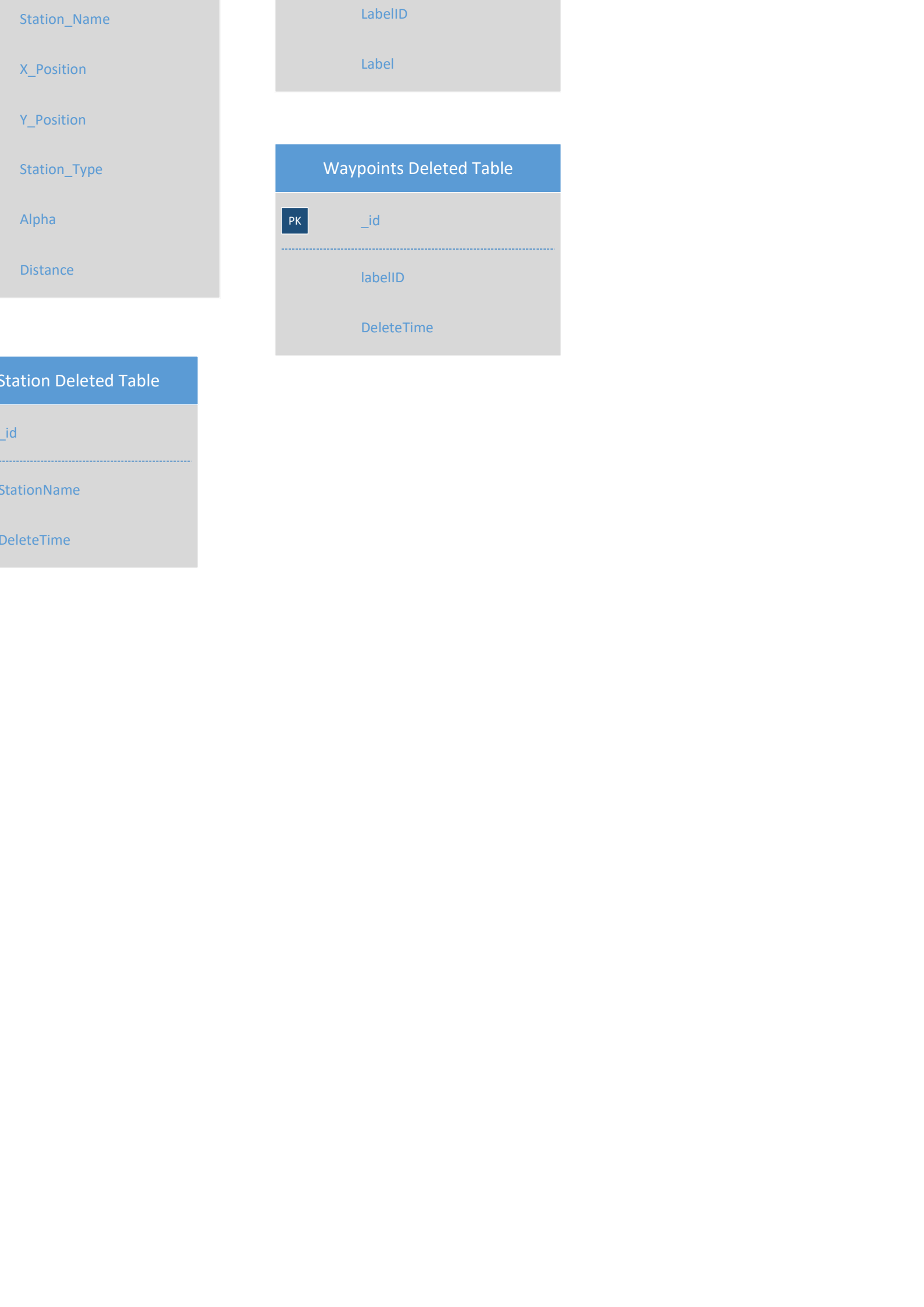
PK

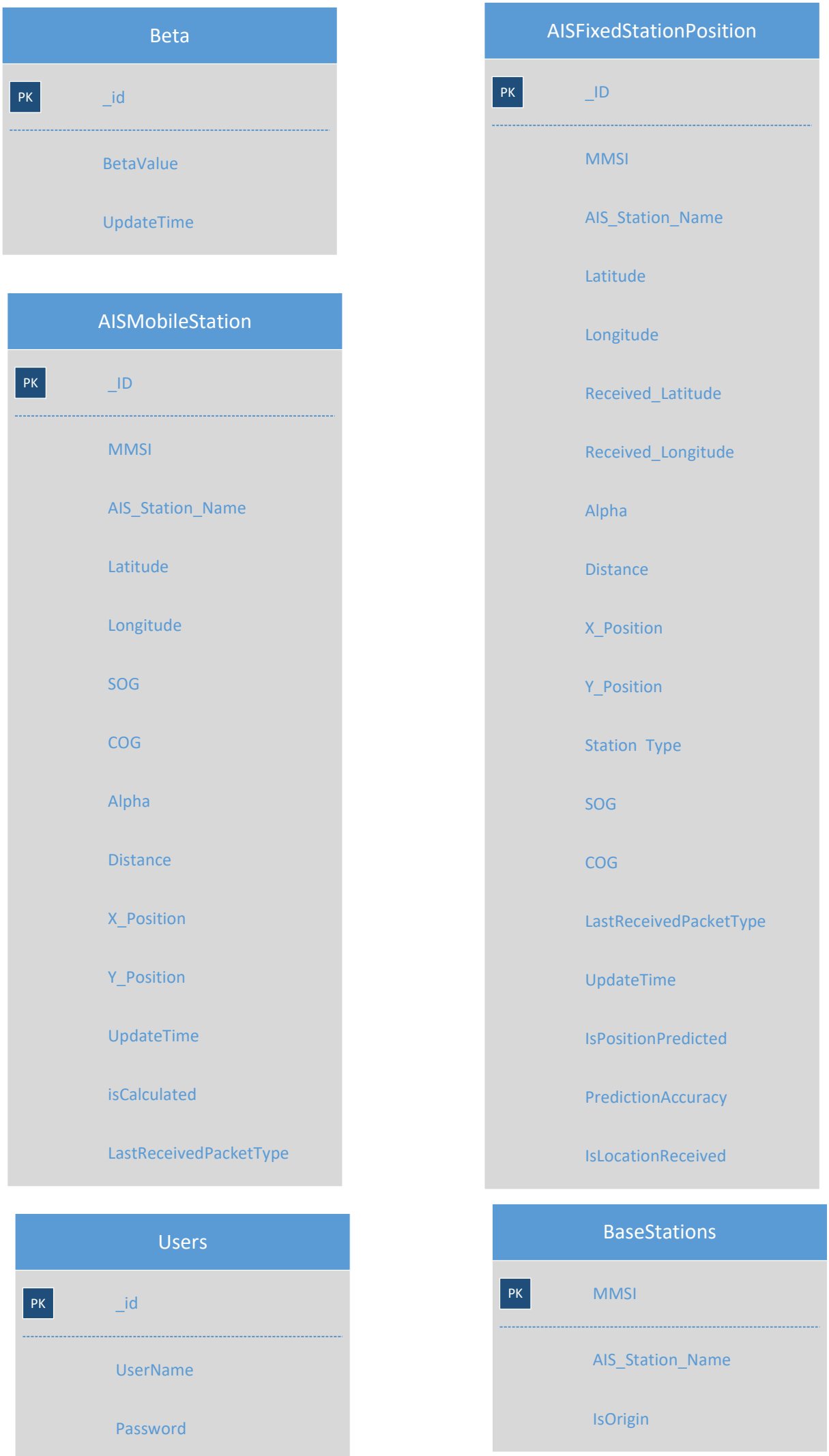

PK
_ID
Devic
Devic
Devic
Opera
Devic
comm
Latitu
Longit
X_Pos
Y_Pos
Updat
Label
Label

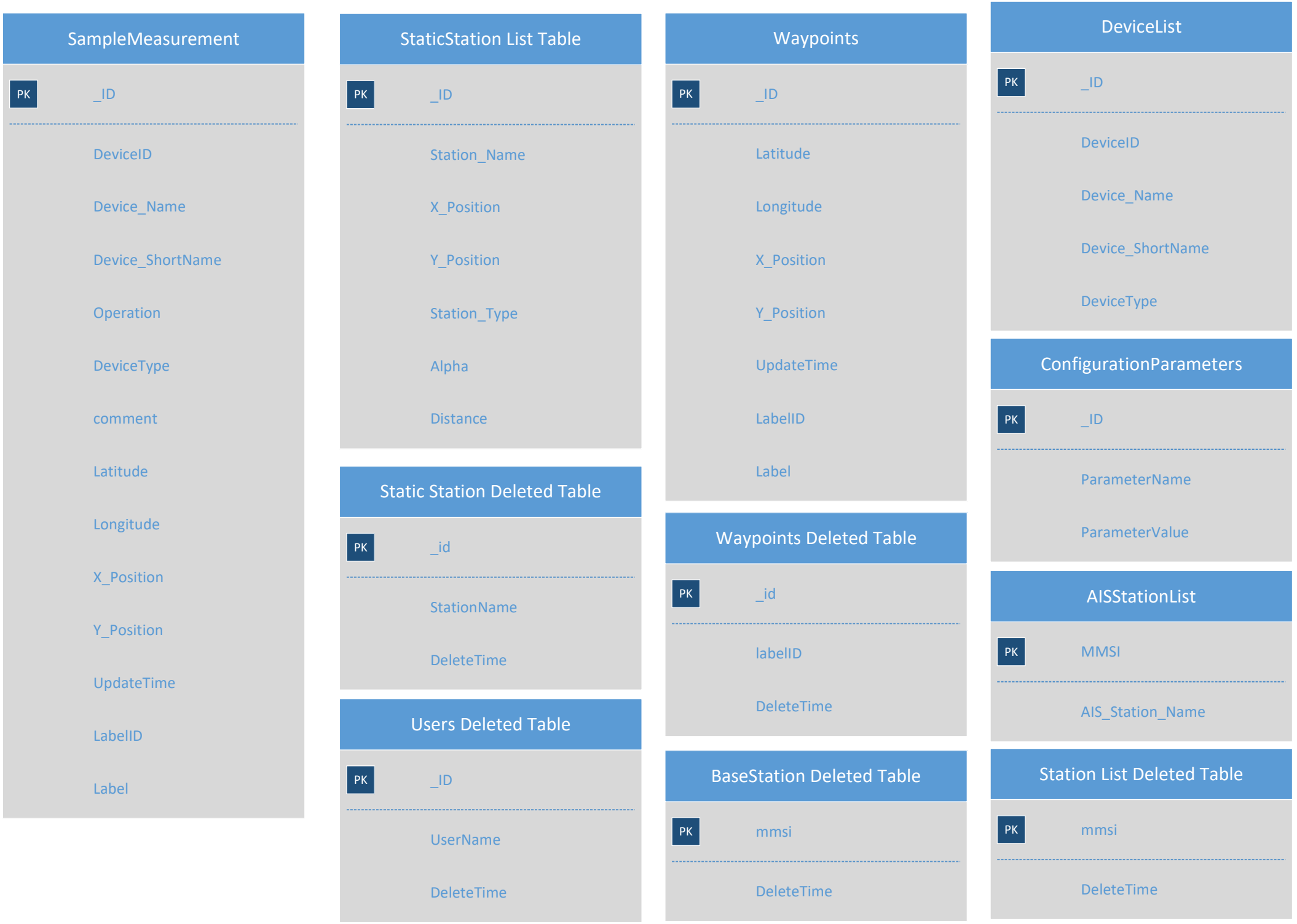

PK
_ID
Statio

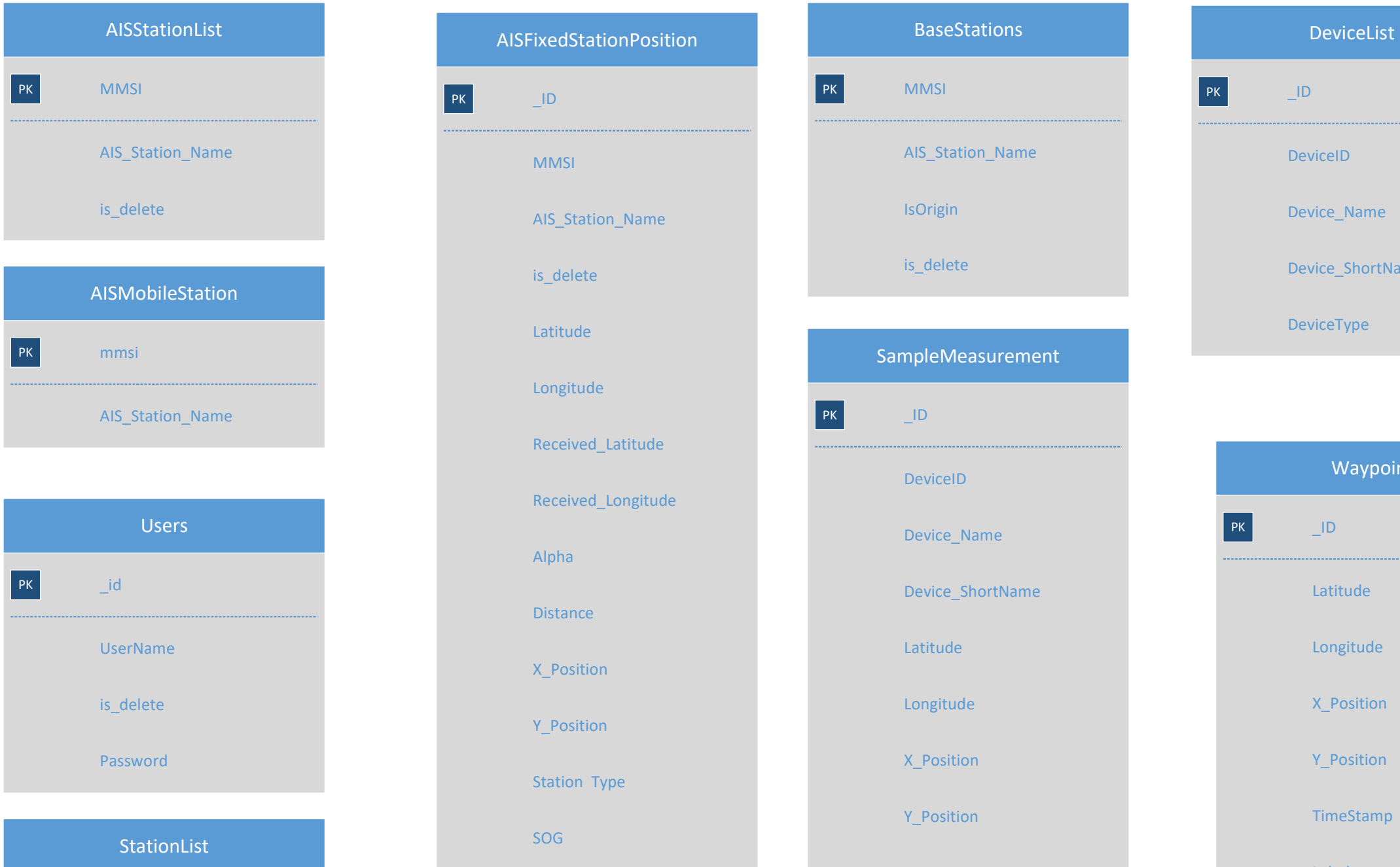

BaseStations
PK
MMSI
AIS_Station_Name
IsOrigin
Beta
PK
_id
BetaValue
UpdateTime
SampleMeasurement
_ID
DeviceID
Device_Name
Device_ShortName
Operation
DeviceType
comment
Latitude
Longitude
X_Position
Y_Position
UpdateTime
LabelID
Label
DeviceList
PK
_ID
DeviceID
Device_Name
Device_ShortName
DeviceType
Data for this table will be
Synchronized
with Sensor Web using XML/JSON.
Label will be exported
daily with IT Database using a CSV F
ConfigurationParameters
PK
_ID
ParameterName
ParameterValue
Waypoints
PK
_ID
Latitude
Longitude
X_Position
Y_Position
UpdateTime
LabelID
taticStation List Table
_ID
Station_Name

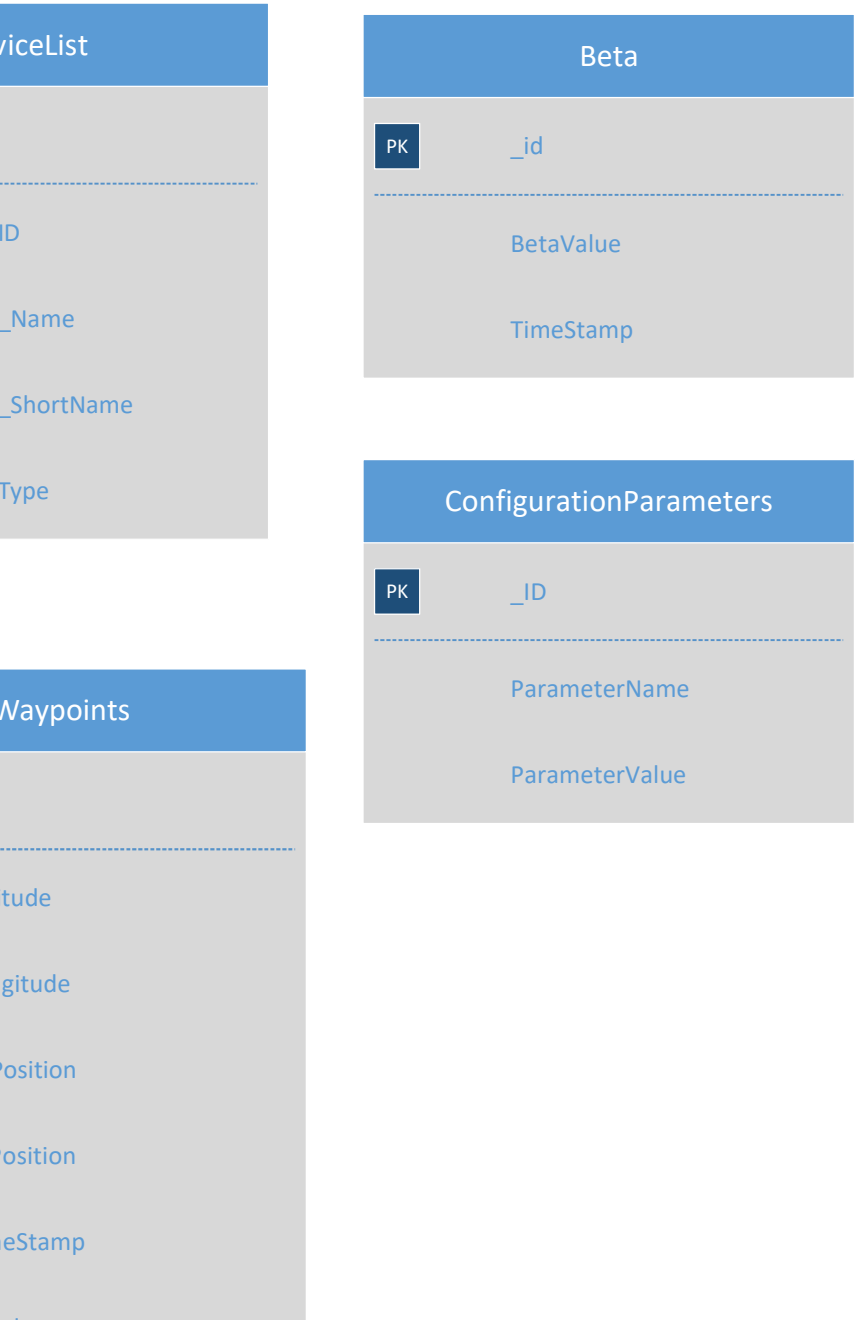

Password
DeleteTime
Statio
X_Pos
Y_Pos
Statio
Alpha
Distar
BaseStation Deleted Table
PK
mmsi
DeleteTime
Users Deleted Table
PK
_ID
UserName
DeleteTime
Static Station
PK
_id
StationNa
DeleteTir

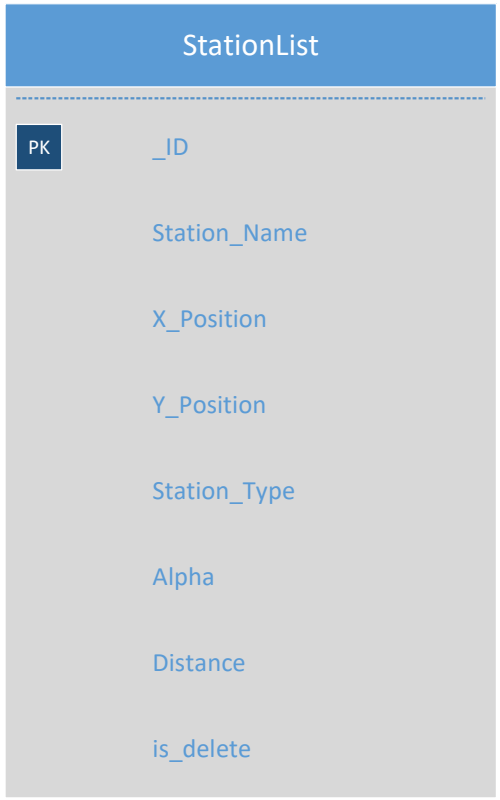

Station_Name
X_Position
Y_Position
Station_Type
Alpha
Distance
LabelID
Label
Waypoints Deleted Table
PK
_id
labelID
DeleteTime
Station Deleted Table
_id
StationName
DeleteTime


Beta
PK
_id
BetaValue
UpdateTime
AISMobileStation
PK
_ID
MMSI
AIS_Station_Name
Latitude
Longitude
SOG
COG
Alpha
Distance
X_Position
Y_Position
UpdateTime
isCalculated
LastReceivedPacketType
Users
PK
_id
UserName
Password
AISFixedStationPosition
PK
_ID
MMSI
AIS_Station_Name
Latitude
Longitude
Received_Latitude
Received_Longitude
Alpha
Distance
X_Position
Y_Position
Station Type
SOG
COG
LastReceivedPacketType
UpdateTime
IsPositionPredicted
PredictionAccuracy
IsLocationReceived
BaseStations
PK
MMSI
AIS_Station_Name
IsOrigin


SampleMeasurement
PK
_ID
DeviceID
Device_Name
Device_ShortName
Operation
DeviceType
comment
Latitude
Longitude
X_Position
Y_Position
UpdateTime
LabelID
Label
StaticStation List Table
PK
_ID
Station_Name
X_Position
Y_Position
Station_Type
Alpha
Distance
Static Station Deleted Table
PK
_id
StationName
DeleteTime
Users Deleted Table
PK
_ID
UserName
DeleteTime
Waypoints
PK
_ID
Latitude
Longitude
X_Position
Y_Position
UpdateTime
LabelID
Label
Waypoints Deleted Table
PK
_id
labelID
DeleteTime
BaseStation Deleted Table
PK
mmsi
DeleteTime
DeviceList
PK
_ID
DeviceID
Device_Name
Device_ShortName
DeviceType
ConfigurationParameters
PK
_ID
ParameterName
ParameterValue
AISStationList
PK
MMSI
AIS_Station_Name
Station List Deleted Table
PK
mmsi
DeleteTime


AISStationList
PK
MMSI
AIS_Station_Name
is_delete
AISMobileStation
PK
mmsi
AIS_Station_Name
Users
PK
_id
UserName
is_delete
Password
StationList
AISFixedStationPosition
PK
_ID
MMSI
AIS_Station_Name
is_delete
Latitude
Longitude
Received_Latitude
Received_Longitude
Alpha
Distance
X_Position
Y_Position
Station Type
SOG
BaseStations
PK
MMSI
AIS_Station_Name
IsOrigin
is_delete
SampleMeasurement
PK
_ID
DeviceID
Device_Name
Device_ShortName
Latitude
Longitude
X_Position
Y_Position
DeviceList
PK
_ID
DeviceID
Device_Name
Device_ShortNa
DeviceType
Waypoi
PK
_ID
Latitude
Longitude
X_Position
Y_Position
TimeStamp


viceList
ID
_Name
_ShortName
Type
Waypoints
tude
gitude
osition
osition
eStamp
Beta
PK
_id
BetaValue
TimeStamp
ConfigurationParameters
PK
_ID
ParameterName
ParameterValue



SOG

COG

LastReceivedPacketType

Time_Stamp(SystemTime)

IsPositionPredicted

PredictionAccuracy

IsLocationReceived

Y_Position

Operation

Device_type

TimeStamp

Label

Label_ID

TimeStamp

Label

Label_ID

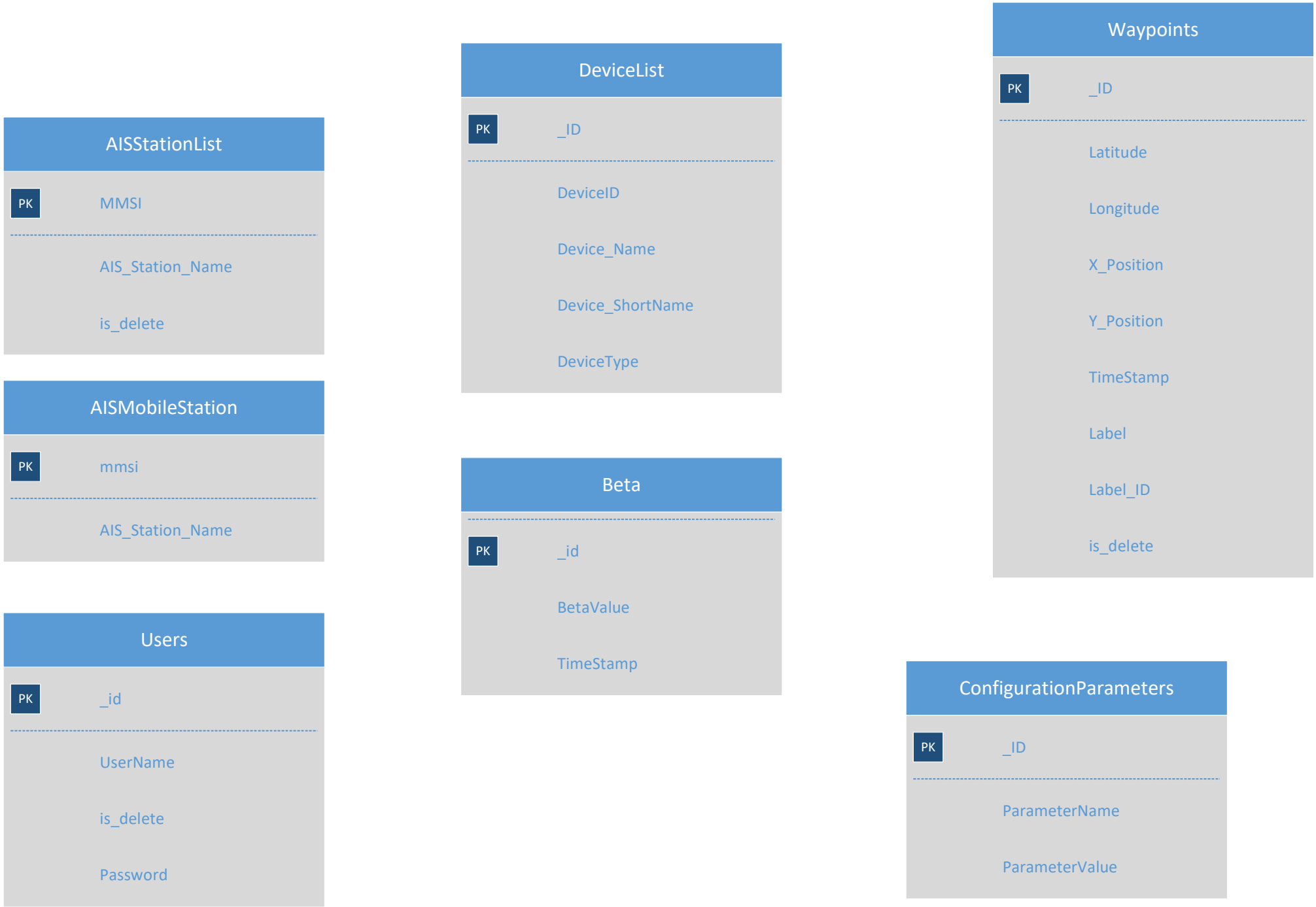
is_delete

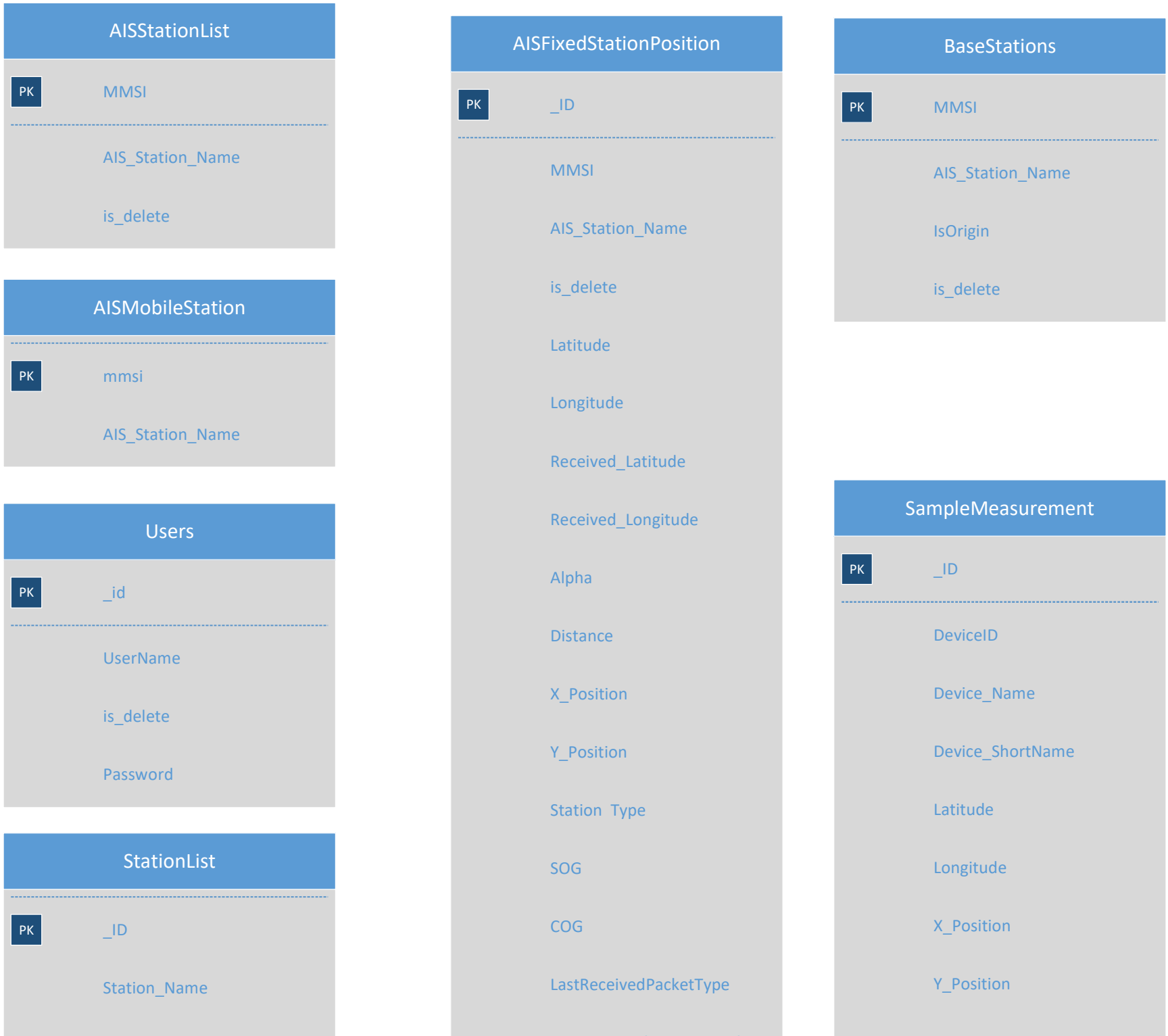
eStamp

el

el_ID

delete


AISStationList
PK
MMSI
AIS_Station_Name
is_delete
AISMobileStation
PK
mmsi
AIS_Station_Name
Users
PK
_id
UserName
is_delete
Password
DeviceList
PK
_ID
DeviceID
Device_Name
Device_ShortName
DeviceType
Beta
PK
_id
BetaValue
TimeStamp
Waypoints
PK
_ID
Latitude
Longitude
X_Position
Y_Position
TimeStamp
Label
Label_ID
is_delete
ConfigurationParameters
PK
_ID
ParameterName
ParameterValue


AISStationList
PK
MMSI
AIS_Station_Name
is_delete
AISMobileStation
PK
mmsi
AIS_Station_Name
Users
PK
_id
UserName
is_delete
Password
StationList
PK
_ID
Station_Name
AISFixedStationPosition
PK
_ID
MMSI
AIS_Station_Name
is_delete
Latitude
Longitude
Received_Latitude
Received_Longitude
Alpha
Distance
X_Position
Y_Position
Station Type
SOG
COG
LastReceivedPacketType
BaseStations
PK
MMSI
AIS_Station_Name
IsOrigin
is_delete
SampleMeasurement
PK
_ID
DeviceID
Device_Name
Device_ShortName
Latitude
Longitude
X_Position
Y_Position

Station_Name

X_Position

Y_Position

Station_Type

Alpha

Distance

is_delete

LastReceivedPacketType

Time_Stamp(SystemTime)

IsPositionPredicted

PredictionAccuracy

IsLocationReceived

Y_Position

Operation

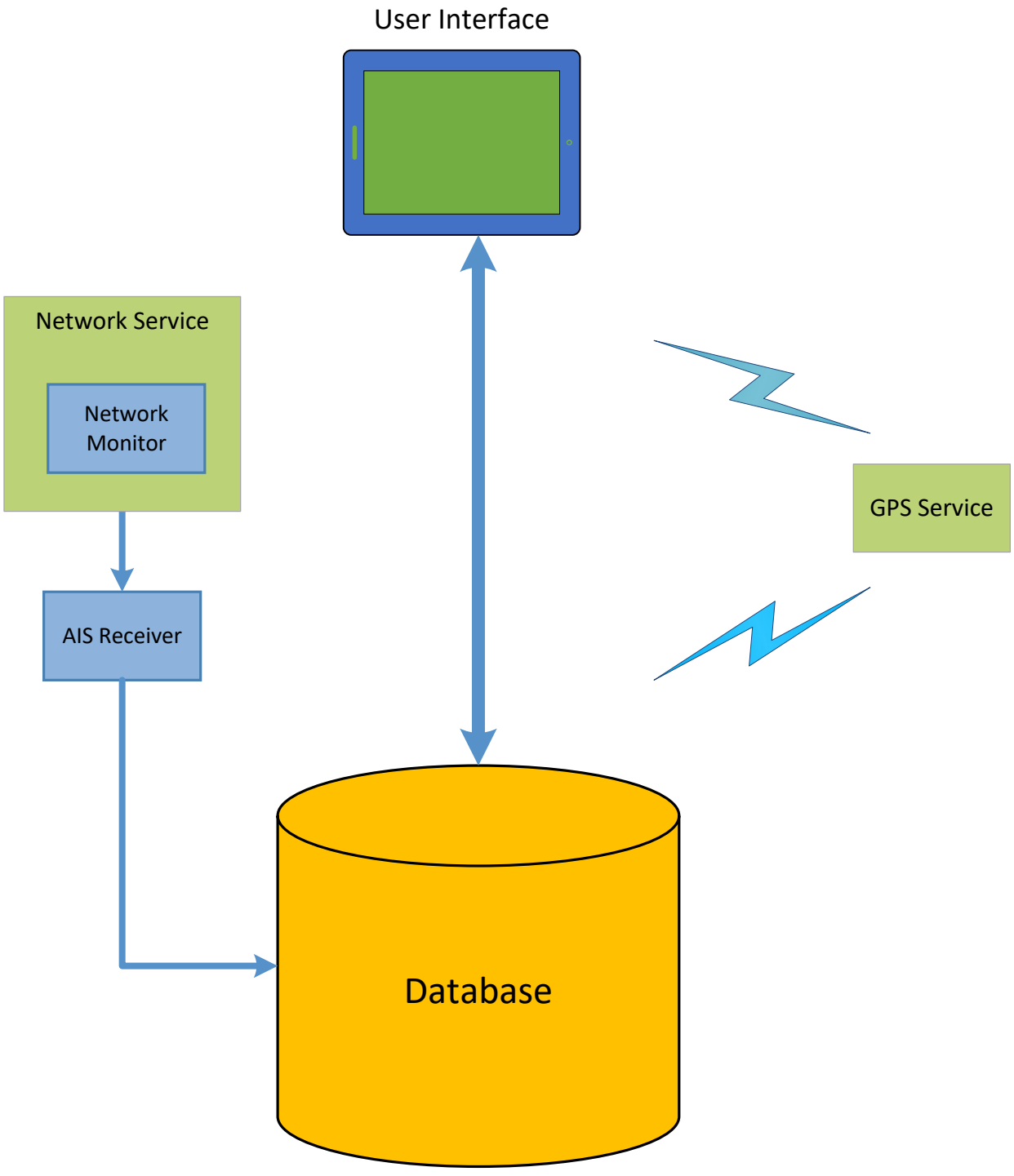
Device_type

TimeStamp

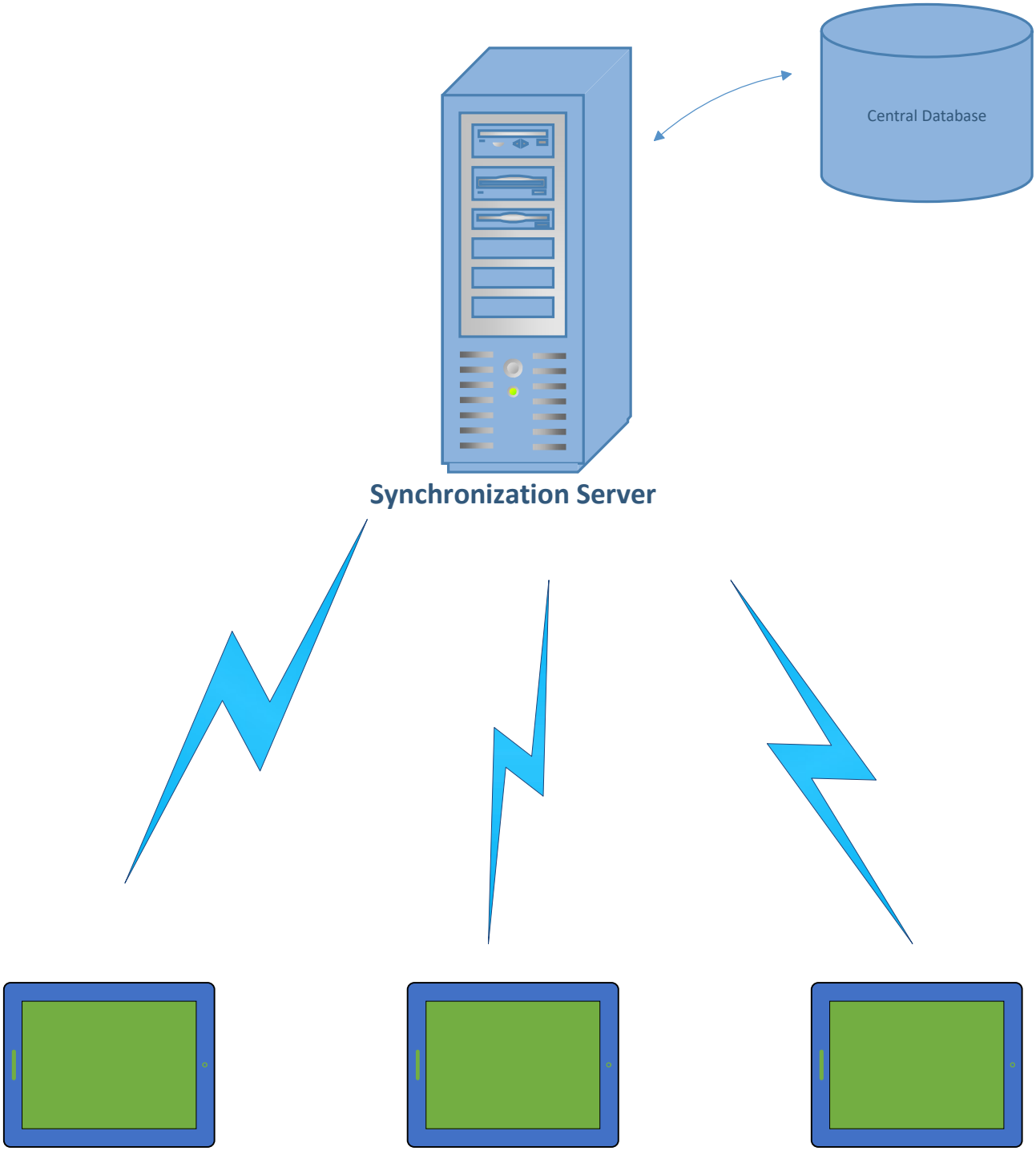
Label

Label_ID

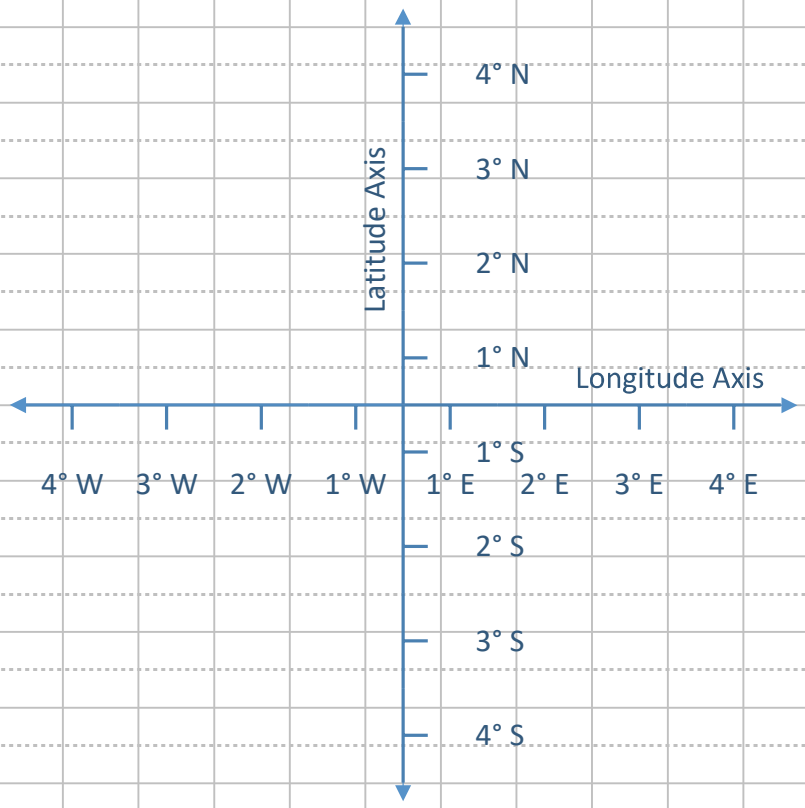
Services During First Use

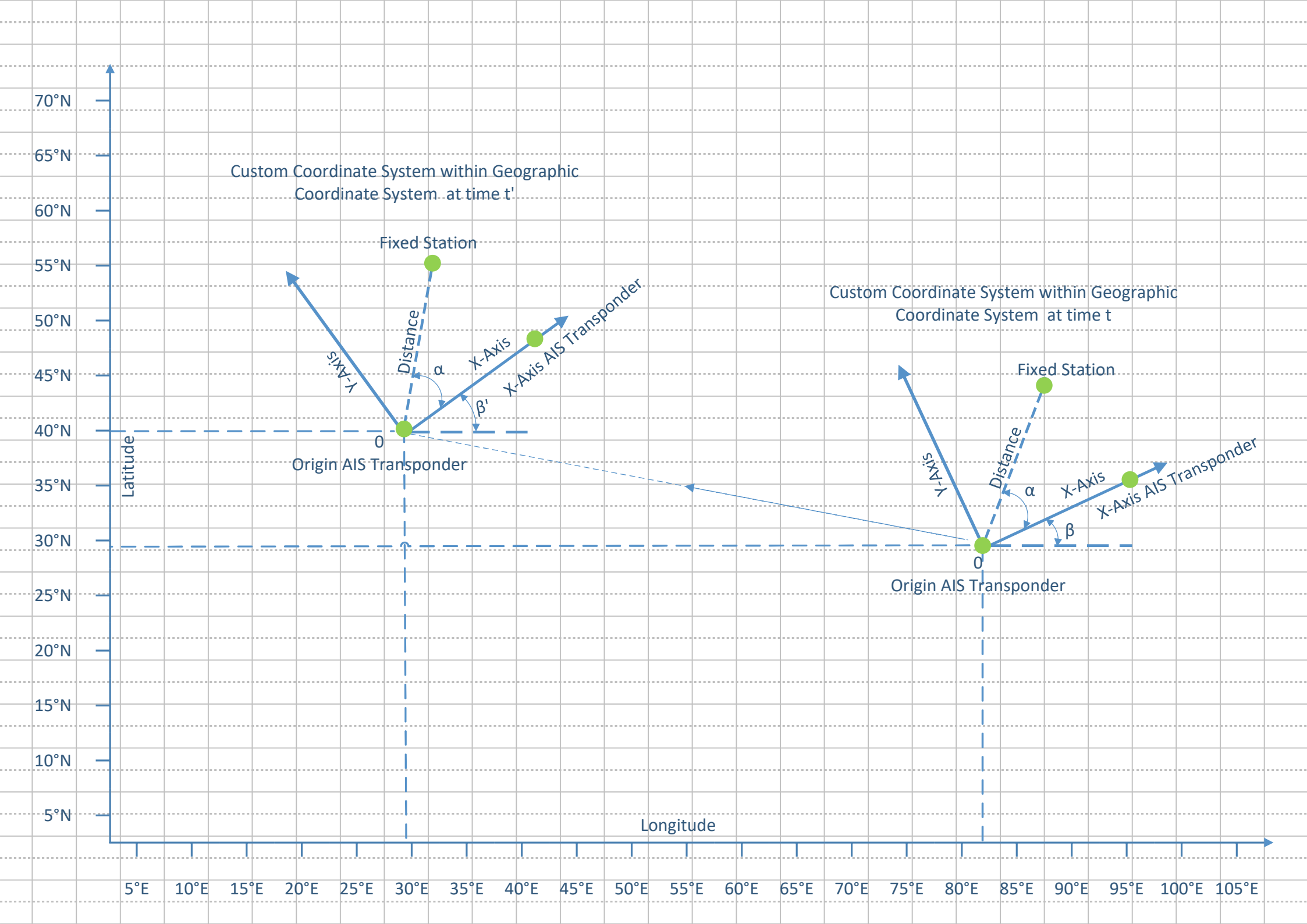


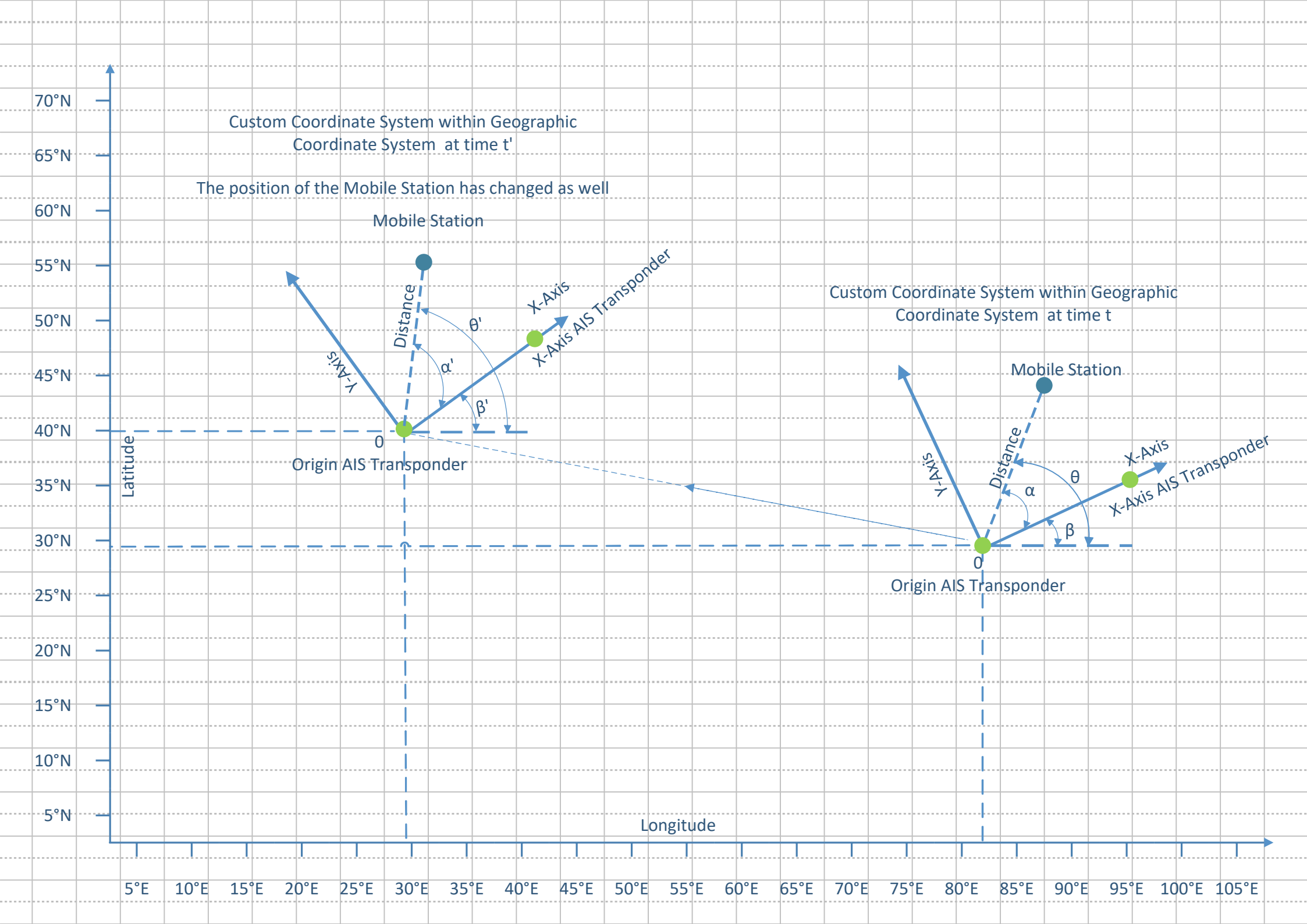
Floe Navigation Synchronization



Tablets with Floe Navigation App

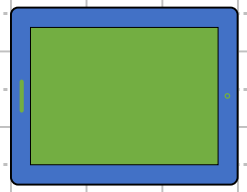

Latitude Axis
4° N
3° N
2° N
1° N
Longitude Axis
1° S
4° W
3° W
2° W
1° W
1° E
2° E
3° E
4° E
2° S
3° S
4° S


70°N
65°N
60°N
55°N
50°N
45°N
40°N
35°N
30°N
25°N
20°N
15°N
10°N
5°N
Latitude
5°E
10°E
15°E
20°E
25°E
30°E
35°E
40°E
45°E
50°E
55°E
60°E
65°E
70°E
75°E
80°E
85°E
90°E
95°E
100°E
105°E
Longitude
Custom Coordinate System within Geographic Coordinate System at time t'
Fixed Station
Distance
α
X-Axis
X-Axis AIS Transponder
β'
Y-Axis
0
Origin AIS Transponder
Custom Coordinate System within Geographic Coordinate System at time t
Fixed Station
Distance
α
X-Axis
X-Axis AIS Transponder
β
Y-Axis
0
Origin AIS Transponder

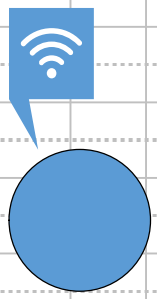

Custom Coordinate System within Geographic Coordinate System at time t'
The position of the Mobile Station has changed as well
Mobile Station
Distance
θ'
α'
β'
X-Axis
X-Axis AIS Transponder
Y-Axis
0
Origin AIS Transponder
Custom Coordinate System within Geographic Coordinate System at time t
Mobile Station
Distance
θ
α
β
X-Axis
X-Axis AIS Transponder
Y-Axis
0
Origin AIS Transponder
Latitude
Longitude
70°N
65°N
60°N
55°N
50°N
45°N
40°N
35°N
30°N
25°N
20°N
15°N
10°N
5°N
5°E
10°E
15°E
20°E
25°E
30°E
35°E
40°E
45°E
50°E
55°E
60°E
65°E
70°E
75°E
80°E
85°E
90°E
95°E
100°E
105°E

System Setup

Tablet



Make Sure that the Tablet is connected only to the Wi-Fi of the Mobile Station.



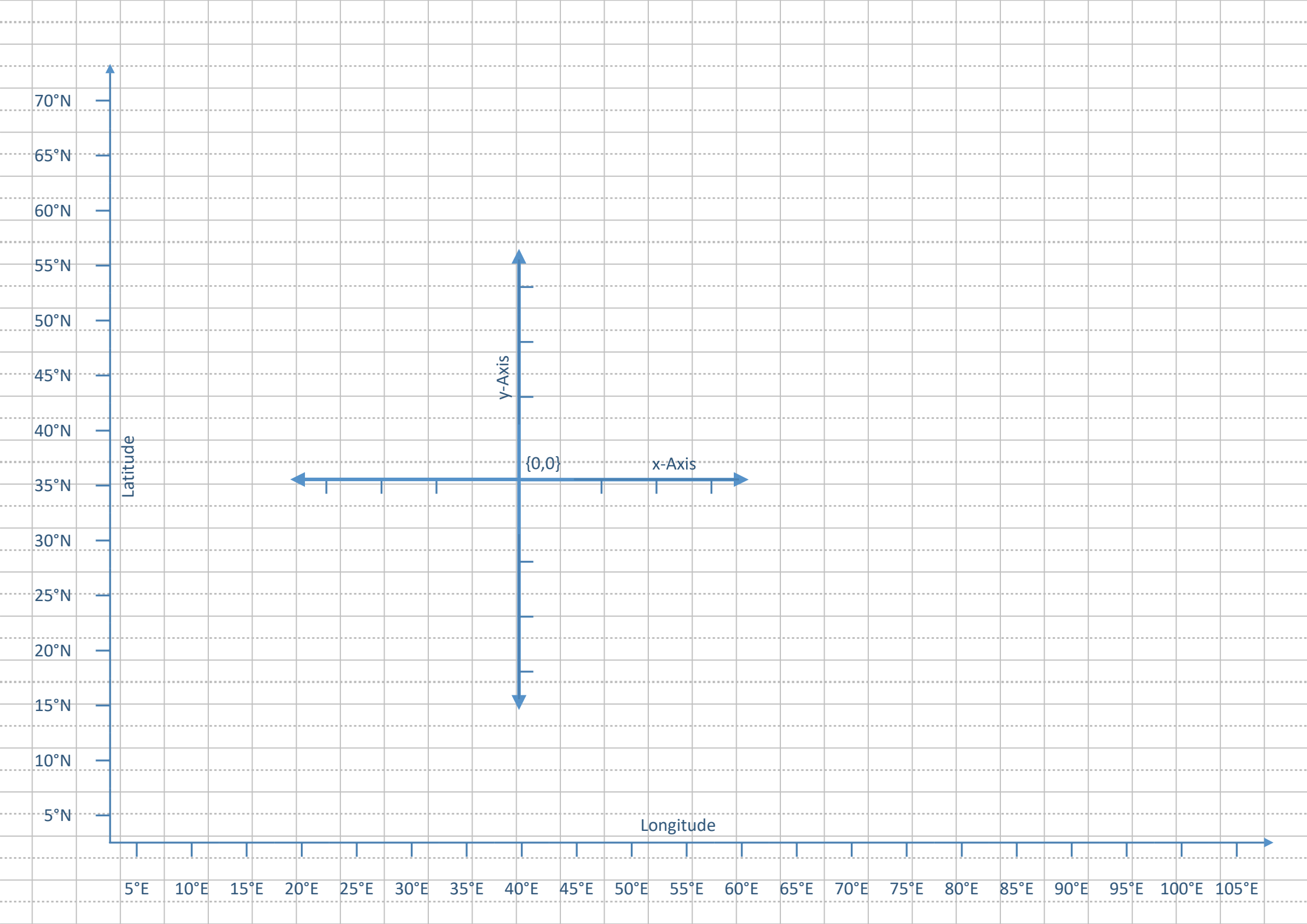
Mobile Station (M01)

This Mobile Station can be moved

Fixed Station 1 (B01)

Do not Move these Fixed Stations (B01 and B02)

Fixed Station 2 (B02)


70°N
65°N
60°N
55°N
50°N
45°N
40°N
35°N
30°N
25°N
20°N
15°N
10°N
5°N
Latitude
y-Axis
{0,0}
x-Axis
Longitude
5°E
10°E
15°E
20°E
25°E
30°E
35°E
40°E
45°E
50°E
55°E
60°E
65°E
70°E
75°E
80°E
85°E
90°E
95°E
100°E
105°E