

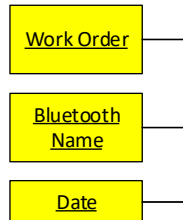
# Figure 1a: 1<sup>st</sup> & 2<sup>nd</sup> Normal Form

## (Suggestion 1)

Legend	Description
<u>Signal Result</u>	Derivable attribute will be removed once the derivation is verified
User Name	Original attribute in the logfile
LogId	Introduced attribute
<u>LogId</u>	Underline represents primary key
(5 similar items)	Represents a group of attributes with the same nature

This composite primary key is suppose to be unique in every logfile. They become to have a transitive dependency on the JobId

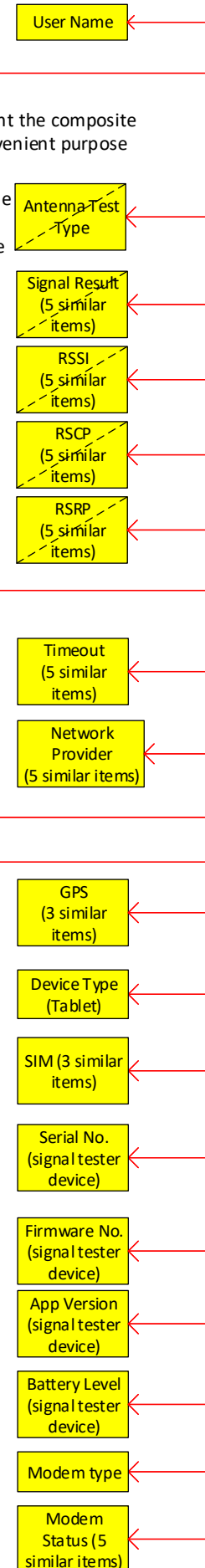
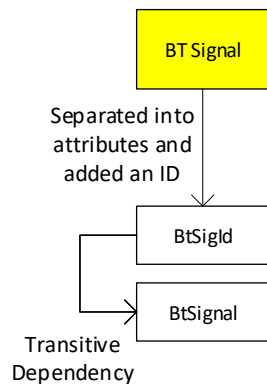
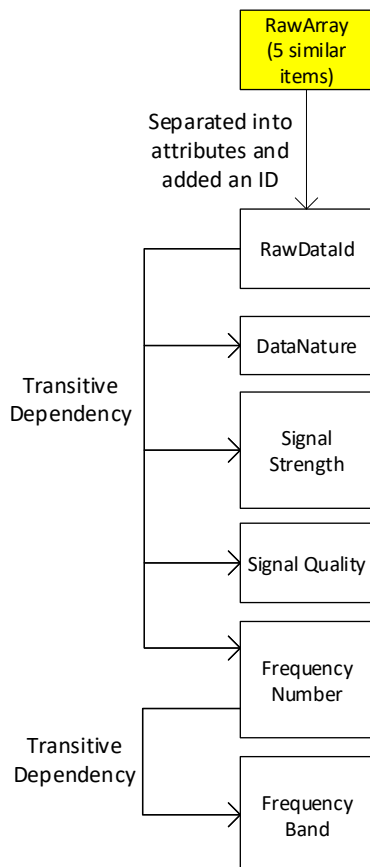
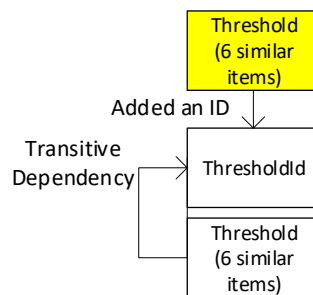
Composite Primary Key



Add an ID to represent the composite primary key for convenient purpose

There are errors on the data of the Antenna Test Type in the logfile. It might be able to be inferred from Modem Status but this data are retained temporarily here for verification purpose and will be removed from this database once the derivation is verified.

Derivable results from RawArray and Threshold (Note: These data are retained temporarily here for verification purpose and will be removed from this database once the derivation is verified.)



# Figure 1b: 1<sup>st</sup> & 2<sup>nd</sup> Normal Form

## (Suggestion 2)

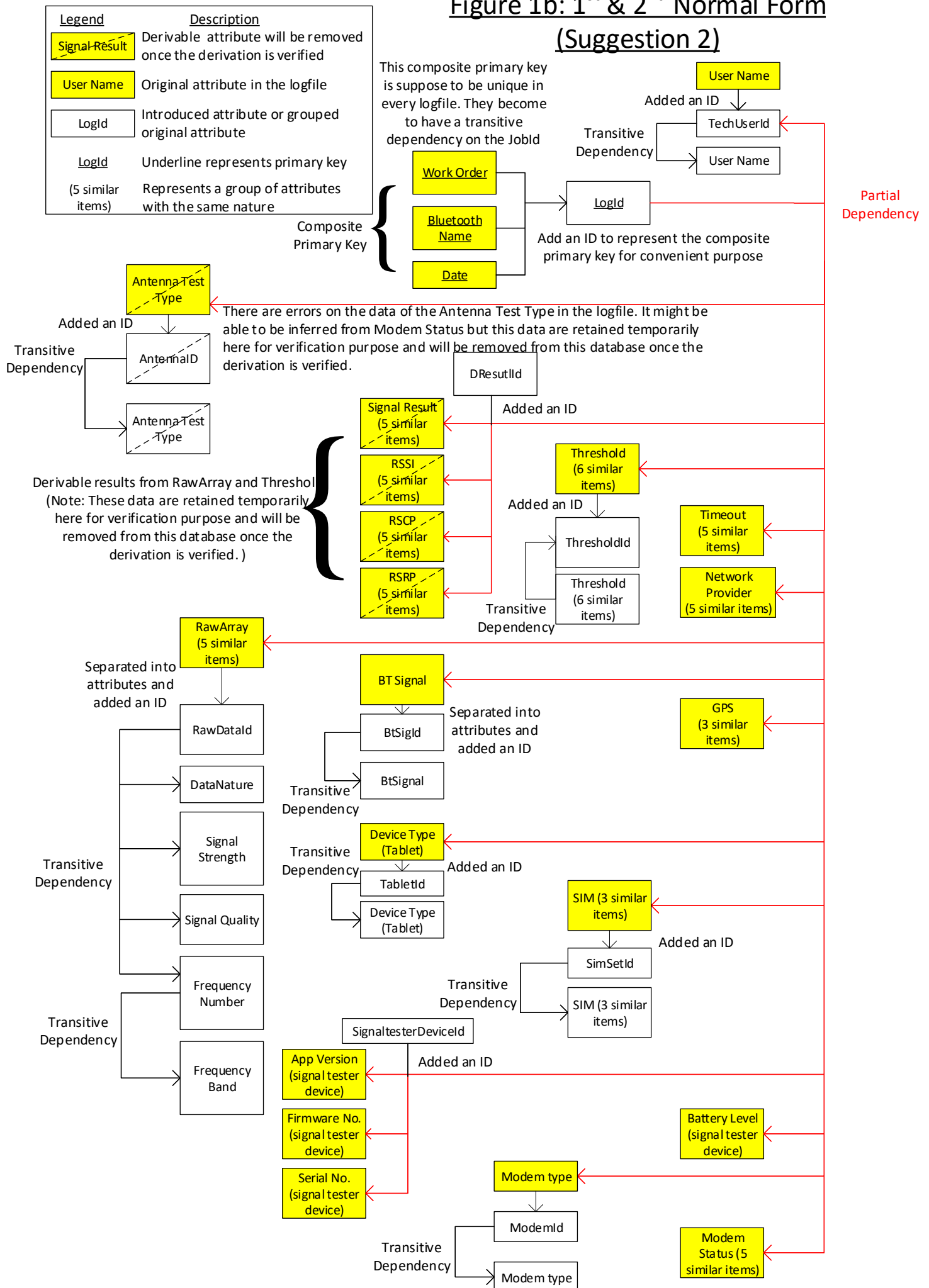
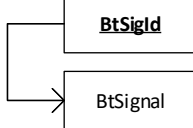


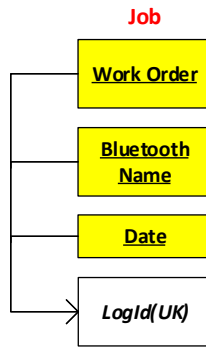
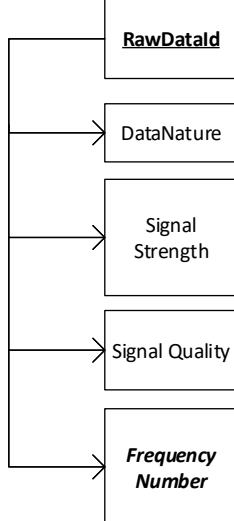
Figure 2a: 3<sup>rd</sup> Normal Form  
(Suggestion 1)

Legend	Description
<b>Signal-Result</b>	Derivable attribute will be removed once the derivation is verified
<b>User Name</b>	Original attribute in the logfile
<b>JobId</b>	Introduced attribute
<b><u>JobId</u></b>	Underline & bold represent primary key
<b><i>JobId</i></b>	Italic & bold represent foreign key
(5 similar items)	Represents a group of attributes with the same nature
<b>Log</b>	Entity Name
<b><i>LogId(UK)</i></b>	(UK) represents unique key

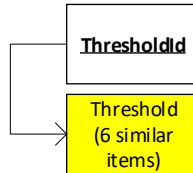
**Bluetooth Signal**  
(Data of the attribute were separated from the array of BT Signal attribute)



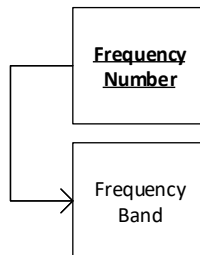
**Raw Data**  
(attributes were separated from RawArray attribute)



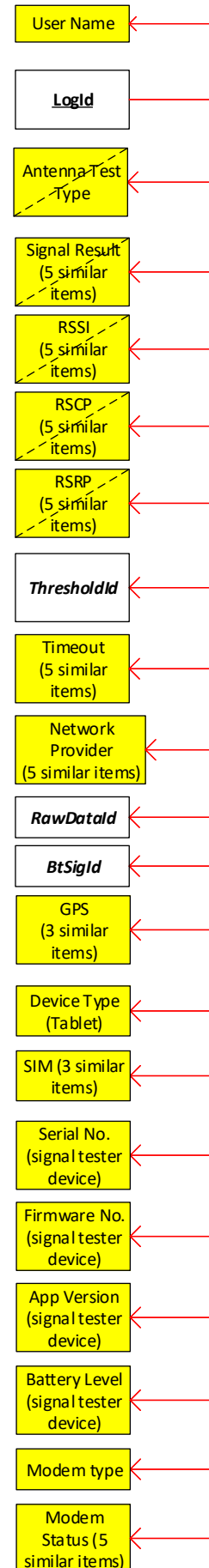
**Threshold**



**Rf**



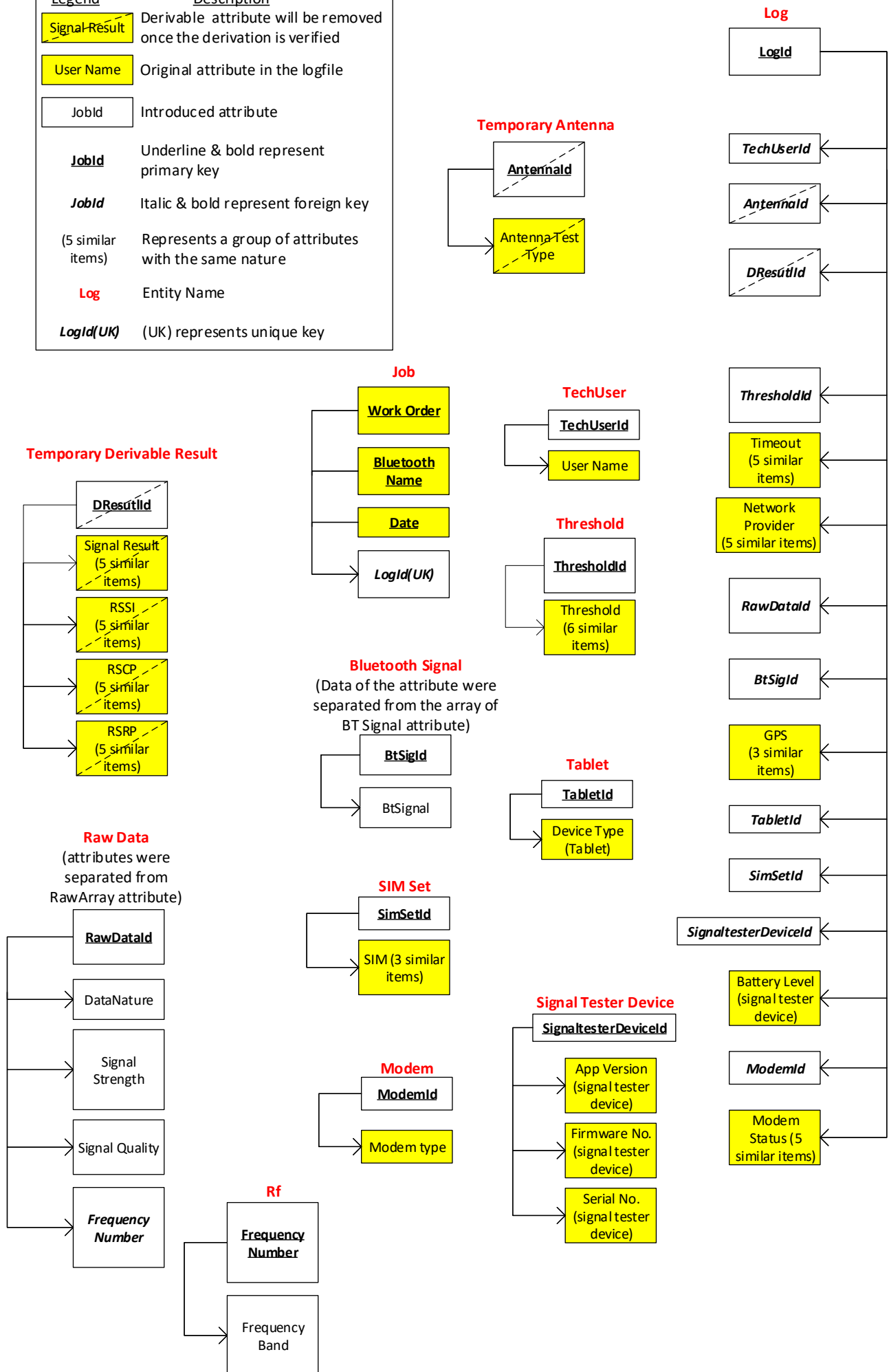
**Log**



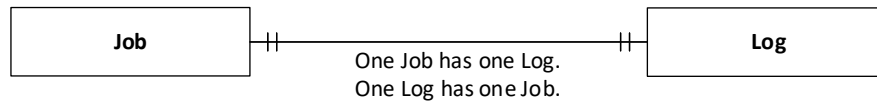
Partial  
Dependency

**Figure 2b: 3<sup>rd</sup> Normal Form  
(Suggestion 2)**

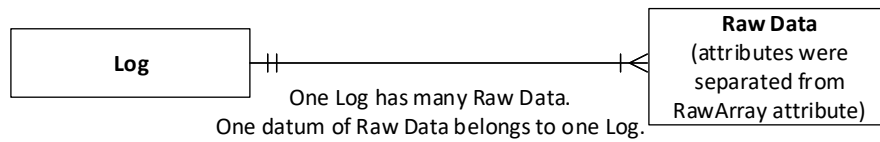
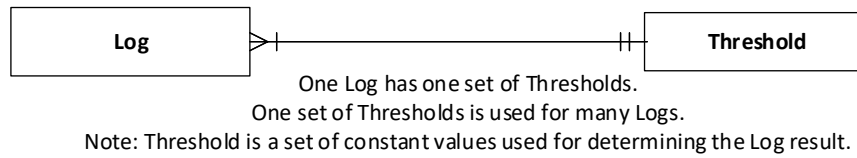
Legend	Description
<b>Signal-Result</b>	Derivable attribute will be removed once the derivation is verified
<b>User Name</b>	Original attribute in the logfile
<b>JobId</b>	Introduced attribute
<u><b>JobId</b></u>	Underline & bold represent primary key
<i><b>JobId</b></i>	Italic & bold represent foreign key
(5 similar items)	Represents a group of attributes with the same nature
<b>Log</b>	Entity Name
<b>LogId(UK)</b>	(UK) represents unique key



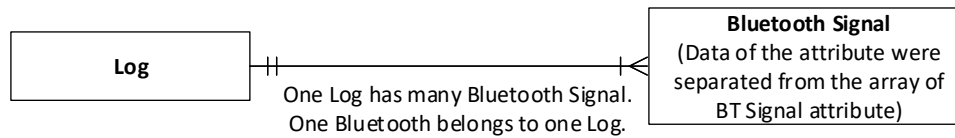
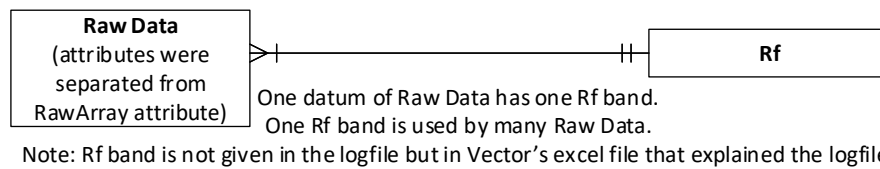
## Figure 3a: Entity Relationship (Suggestion 1)



(Note: Job Table is used for simplify the composite primary key in the logfile showing in 1<sup>st</sup> normal form in Figure 1).

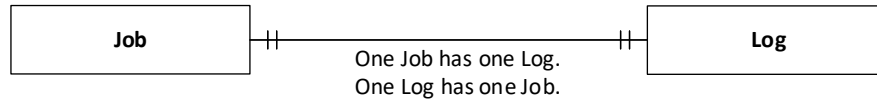


Note: Raw Data was a composite attribute in the datafiles and is separated into various attributes in the Raw Data Table used for determining the test result.

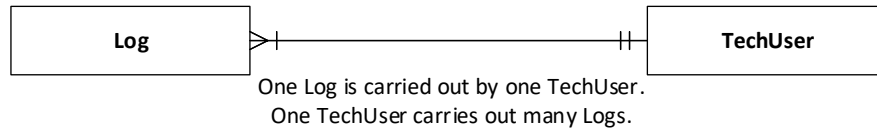


Note: Bluetooth Signal was a composite attribute in the datafiles and is separated into multiple data in the Bluetooth Signal Table.

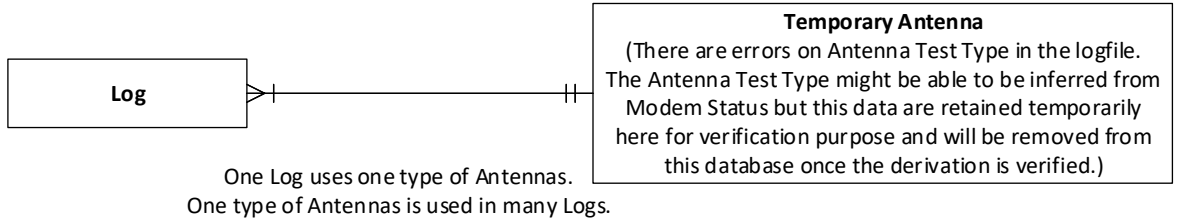
## Figure 3b: Entity Relationship (Suggestion 2)



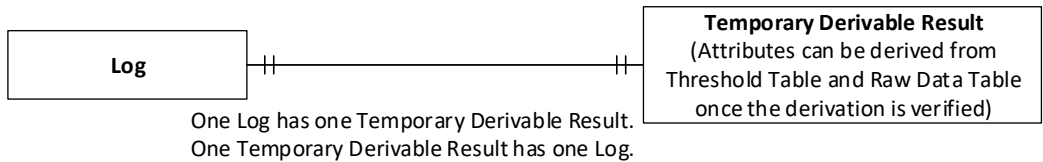
(Note: Job Table is used for simplify the composite primary key in the logfile showing in 1<sup>st</sup> normal form in Figure 1).



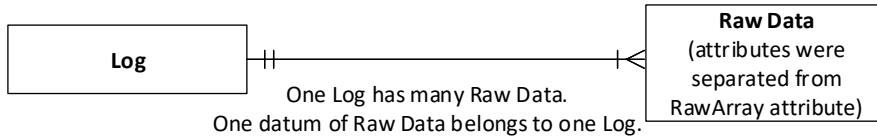
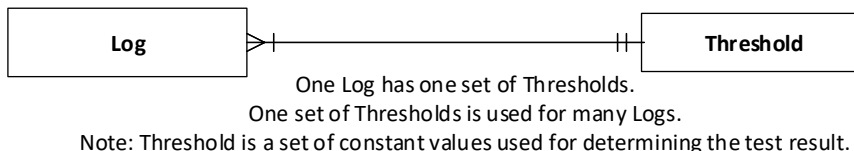
Note: TachUser Table is used for merging with existing human resource system and avoiding anomalies in the further system development.



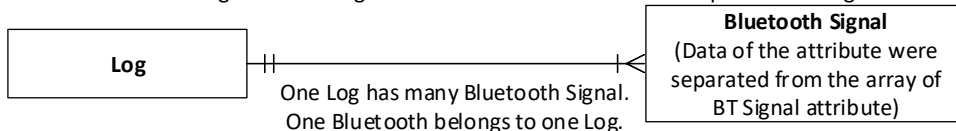
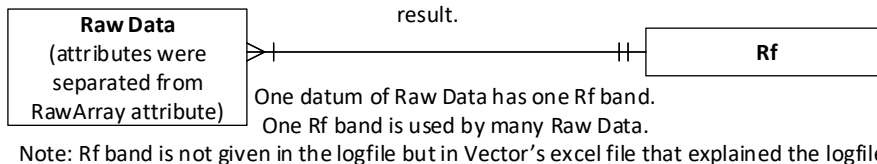
Note: Antenna Table is used for merging with existing inventory system and avoiding anomalies in the further system development.



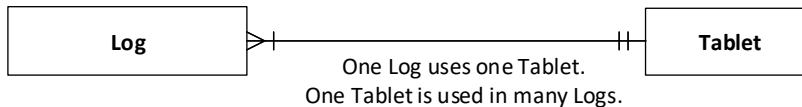
Note: Temporary Derivable Result will be removed once the derivation is verified, so it is temporarily separated from the Log.



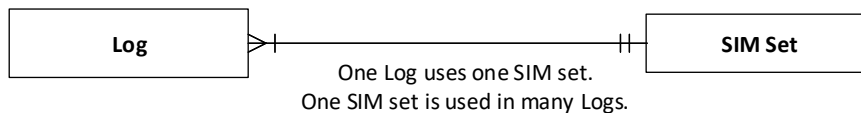
Note: Raw Data was a composite attribute in the datafiles and is separated into various attributes in the Raw Data Table used for determining the test result.



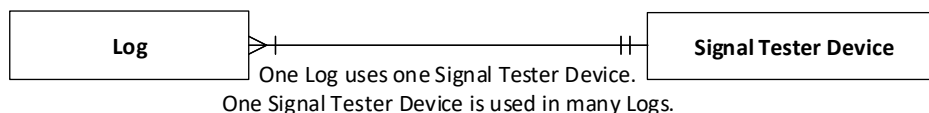
Note: Bluetooth Signal was a composite attribute in the datafiles and is separated into multiple data in the Bluetooth Signal Table.



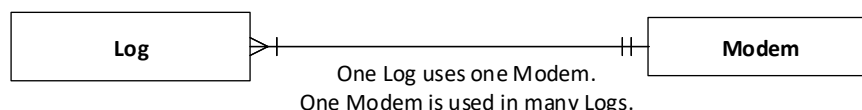
Note: Tablet Table is used for merging with existing inventory system and avoiding anomalies in the further system development.



Note: SIMSet Table is used for merging with existing inventory system and avoiding anomalies in the further system development.



Note: Signal Tester Device Table is used for merging with existing inventory system and avoiding anomalies in the further system development.



Note: Modem Table is used for merging with existing inventory system and avoiding anomalies in the further system development.

Figure 4a: Entity Relationship Diagram (Suggestion 1)

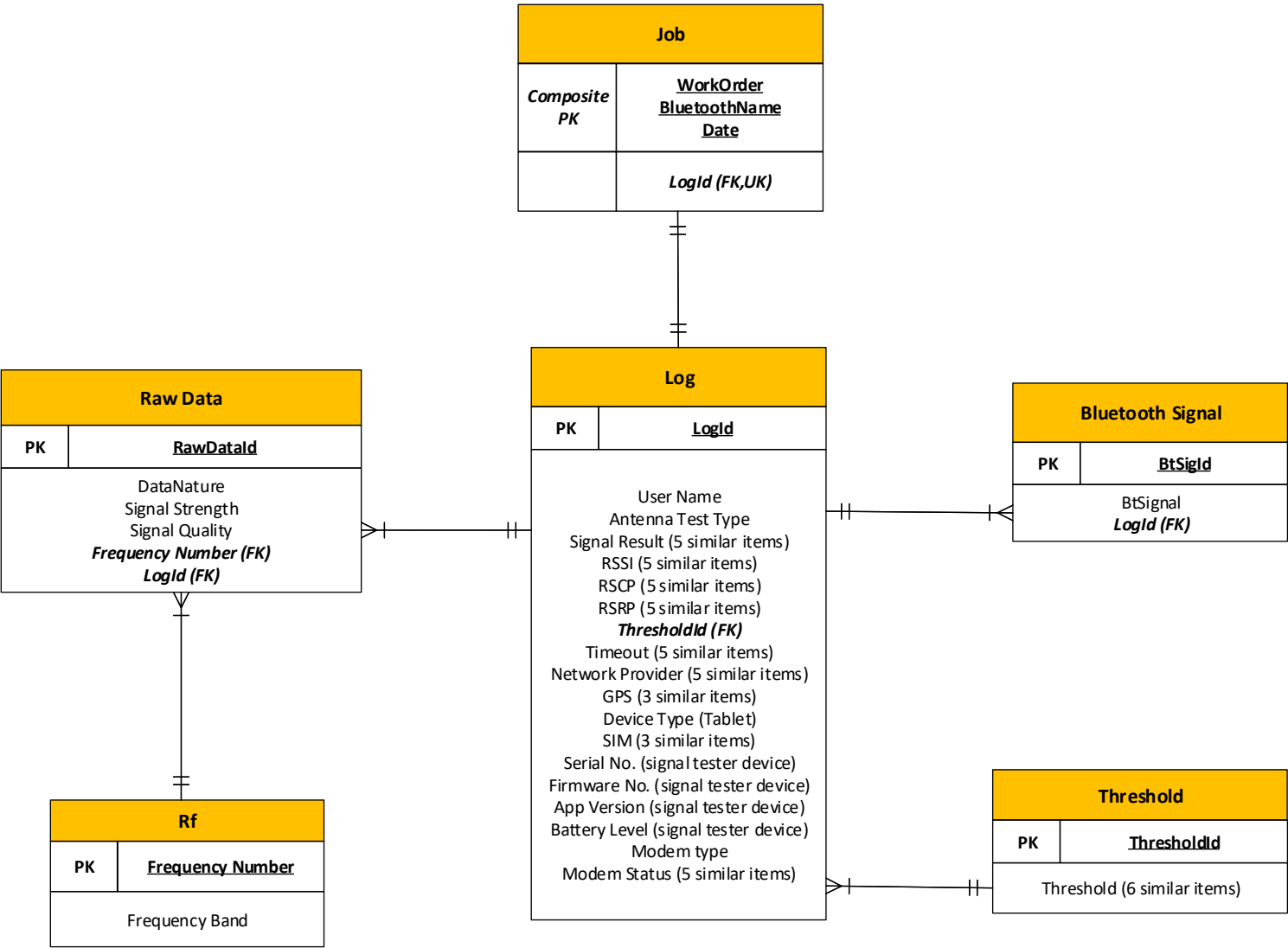


Figure 4b: Entity Relationship Diagram (Suggestion 2)

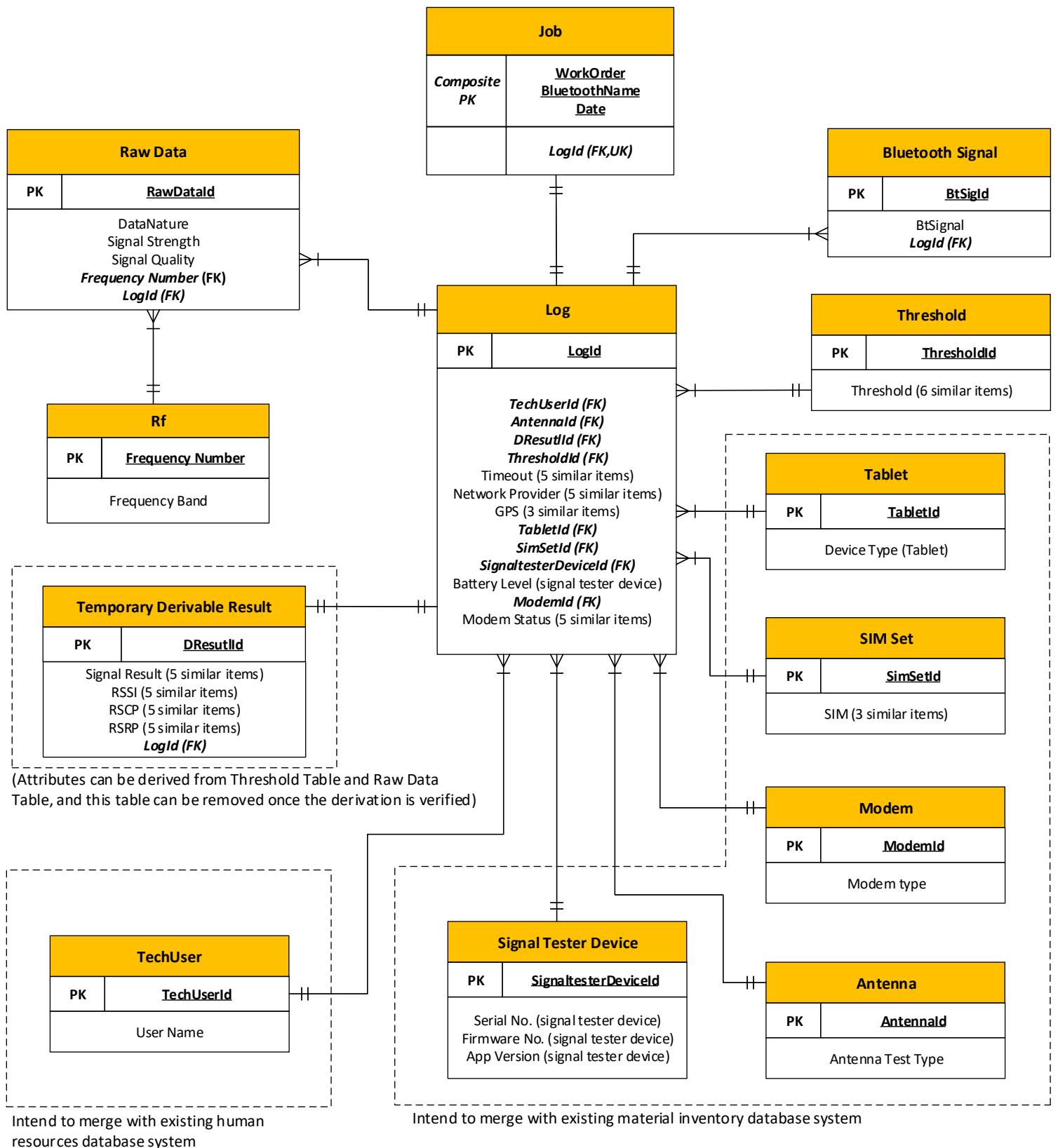




Figure 4b: Entity Relationship Diagram (Suggestion 2)

