

# Record Tracking Satellites

Book Sections Reference: 5.3.5 & 12.1.8

Record Tracking Satellites provide the ability to track when business-keys were last seen provided by the source. This is required especially in the context when some system limitation is causing business keys to sometimes disappear, reappear. Record tracking satellites can be used to also highlight the combination of business keys, i.e. they can exist on Link tables as well. However, for Link tables we would propose you consider a Effectivity satellites, as it is probably more suited.

## WhereScape 3D

### Dependent objects

### Sample Repo

- Look at the examples created in 3D repo **wsDVSamples.repo**

### Model Conversion Rules

- 1 additional rule for the generation of Data Vault (**ws3d\_grv - Create Record tracking satellites**)
- 1 additional rule for generation of Load and Stage (**ws3d\_rvls - Record tracking satellite - staging**)

Copy from wsDVSamples.repo or import **RecordTracking\_MCR.xml**

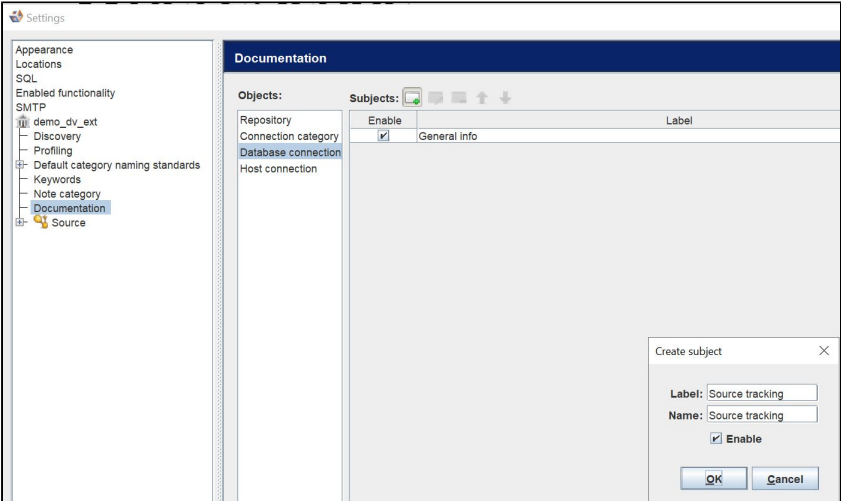
### Template

- 1 additional Query generation template used by the Load and Stage (**ws3d\_dv\_record\_tracking**)

Copy from wsDVSamples.repo or import **RecordTracking\_TEMPLATES.xml**

### Steps to implement

If a particular stage is not mentioned, then you can assume it would follow the standard process of generating a Data Vault.

#	Category	Description
1	Global settings	<p>Record-tracking is enabled on connection level</p> <p>You have to add a documentation subject on "Database connection" - level named "Source tracking"</p> 

2 Connection level

Then set insert into the desired connection an "Y" for enabled - anything else for disabled

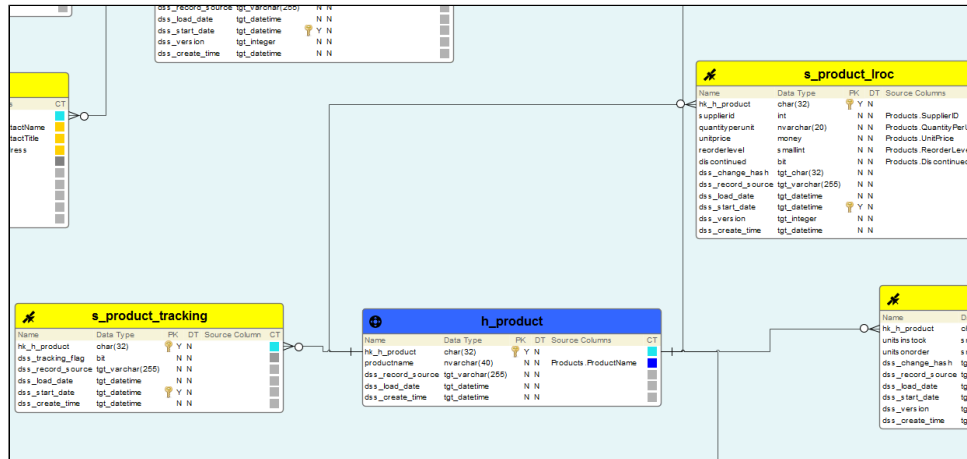
3 Data Vault

Add Attribute-Type "dss\_tracking\_flag" to Data Vault

Attribute name	Description	Notes
Change hash key	Multi-active satellite sequence attribute	A change hash column (low)
Hub surrogate key	Hub surrogate key column	A Hub surrogate key column
dss_load_date	A dss column for load date	A dss column for load date
dss_start_date	A dss column for start date	A dss column for start date
dss_end_date	A dss column for end date	A dss column for end date
dss_record_source	A dss column for record source	A dss column for record source
dss_update_time	A dss column for last update	A dss column for last update
dss_create_time	A dss column for create time	A dss column for create time
dss_version	A dss column for version number	A dss column for version number
dss_current_flag	A dss column for indicating current	A dss column for indicating current
To be deleted	A column that will be removed	A column that will be removed
Satellite low volatility	To create a Satellite with low	To create a Satellite with low
Satellite medium volatility	To create a Satellite with medium	To create a Satellite with medium
Satellite high volatility	To create a Satellite with high	To create a Satellite with high
Satellite transaction	To create a Satellite with transaction	To create a Satellite with transaction
Link business key	Foreign key attributes that m	Foreign key attributes that m
dss_tracking_flag		dss_tracking_flag

Generate from the Data Vault Design Model with the standard-process enhanced with the following Rules

In the Data Vault Model you should notice that for every hub and link that receives data from the rts-active connection a satellite "\_tracking" has been created:



Things to note:

- The dss\_tracking\_flag indicates with 0 (not seen) or 1 (seen) that with the last loading this key has been seen or not.
- There shouldn't be any other columns (except for the standard-dates, recordsource and the key itself)

4 Load And Stage

Add Attribute-Type "dss\_tracking\_flag" to Load and Stage

Documentation	Change mask key	A change mask column (0 or 1)
Data vault	Multi-active satellite sequence attribute	The sequence column for MAA
General	Hub surrogate key	A Hub surrogate key column
Version	dss_load_date	A dss column for load date
Connection	dss_start_date	A dss column for start date
Discovery	dss_end_date	A dss column for end date
Profiling	dss_record_source	A dss column for record source
Entity	dss_update_time	A dss column for last update
Attribute	dss_create_time	A dss column for create time
General	dss_version	A dss column for version number
Attribute types	dss_current_flag	A dss column for indicating current
Attribute ratings	To be deleted	A column that will be removed
Data characteristics	Satellite low volatility	To create a Satellite with low volatility
Relationship	Satellite medium volatility	To create a Satellite with medium volatility
Constraint	Satellite high volatility	To create a Satellite with high volatility
Index	Satellite transaction	To create a Satellite with transactional
Import	Link business key	Foreign key attributes that match
Storage	dss_tracking_flag	dss_tracking_flag
Source Mapping		
Creation		

5 Generate from the Data Vault Design Model with the standard-process enhanced with the following Rules:

Generate load and stage for data vault

Apply model conversion

Select a model conversion

Model conversion:

- ws3d\_rvls - Create initial stages (Template) x
- ws3d\_rvls - Define change hashes on satellite stages (Template) x
- ws3d\_rvls - Define extended properties for hub and link hash key (Template) x
- ws3d\_rvls - Merge and clean up stages (Template) x
- ws3d\_rvls - Create loads (Template) x
- ws3d\_rvls - Record tracking satellite - staging (Template) x
- ws3d\_rvls - Housekeeping (Template) x

Things to note:

- There will be no additional stage for the tracking-satellites as they use the staging from the hub or link.
- The DW-Query has already been created and will be exported to RED - that is why there should be 3D-templates for different target-DWH.
- The DW-Query and the column-transformation will determine the query that will be used in the final script.

# WhereScape RED

## Dependent objects

## Templates

- dv\_perm templates need additional logic to remove the Current Satellite version join in the case of a tracking satellite

## Steps to implement

Look at the sample template **cust\_sqlserver\_proc\_dv\_perm.peb** for an example of what changes are required.

#	Description of change	Snippet Code
1	The dv_perm template for your target platform needs to be adjusted in order to use record tracking satellites	<pre>{%- set isTrackingSatellite = false -%} {%- from table.columns as col where col.name == "dss_tracking_flag" -%} {%} {%- set isTrackingSatellite = true -%} {%- endfrom -%}</pre>
2	This variable should then be used to NOT <b>addSatCurrentVersion</b>	<pre>{%- elseif table.objectType == Types.ObjectType.Satellite and not (isTrackingSatellite or isEffectivitySatellite) %} --&gt;addSatCurrentVersion&lt;-- {{addSatCurrentVersion()}}</pre>
3	This variable should then be used to NOT <b>addSatWhereNotExists</b>	<pre>{%- elseif table.objectType == Types.ObjectType.Satellite and not (isTrackingSatellite or isEffectivitySatellite) %} --&gt;addSatWhereNotExists&lt;-- {{addSatWhereNotExists()}}</pre>