



**Critical**  
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# Sub-Material Processing

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### DOCUMENT ACCESS

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# Sub-Material Processing

*Estimated time to read: 4 minutes*

The processing and tracking of Sub-Materials needs to follow procedures so that nothing deviates from its planned or expected path.

Sub-Material processing is only possible when a main Material exists and it is can be split into smaller parts. As such, Sub-Material processing is material processing when done to a Material that is attached to a main Material.





This document will guide you through the actions required for Sub-Material processing in Critical Manufacturing.

## Overview

Critical Manufacturing implements a hierarchical **Material** and **Resource** model. When it comes to tracking **Material** with Sub-Materials there are different possibilities which are determined by two properties:

- **Step**
- *Sub-Material tracking state depth* - defaults to zero (Top level **Material** only) and determines the depth desired tracking.
- **Resource**
- *Allow Sub-Material tracking* - defaults to false and determines whether the immediate Sub-Material level can be tracked in and tracked out individually.

To better illustrate the usage of these two properties, some scenarios are presented here. In all the scenarios below, the color code should be interpreted as shown in the next figure.

Entity	Color	Description
Material		Queued
Material		InProcess
Material		Processed
Resource		Main

Entity	Color	Description
Resource	Res 1.2	Sub

Table: Sub-Material Tracking legend

#### Info

In the examples below, it's not considered the case of In-Step Sampling where a Sub-Material is marked as Skipped. When a Sub-Material is marked as Skipped, that Sub-Material cannot be tracked-in or tracked-out at the **Step**.

## Scenario summary

Scenario	Sub-Material depth	Sub-Material tracking state depth	Allow Sub-Material tracking	SubResource configuration
1	3	1	False	no SubResources
2	3	2	True	no SubResources
3	3	2	True	3 1
4	3	3	True	3 2

Table: Summary of Sub-Material tracking scenarios

#### Note

1 All **Resources** allow Sub-Material tracking.

#### Note

2 Only the top-level **Resource** allows Sub-Material tracking.

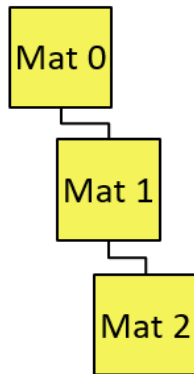
## Scenario 1

Sub-Material depth	Sub-Material tracking state depth	Allow Sub-Material tracking	SubResource configuration
3	1	False	no SubResources

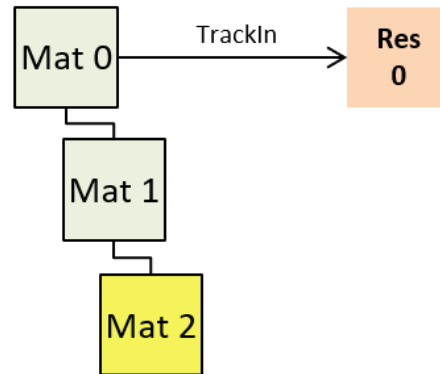
Table: Sub-Material tracking scenario 1

In this case, because the **Resource** does not allow Sub-Material tracking, only the Top level **Material** is tracked-in and tracked-out. The **Step** state depth will automatically mark the Sub-Material at the first level as both InProcess at TrackIn and Processed at TrackOut.

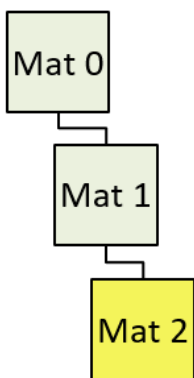
**Before TrackIn**



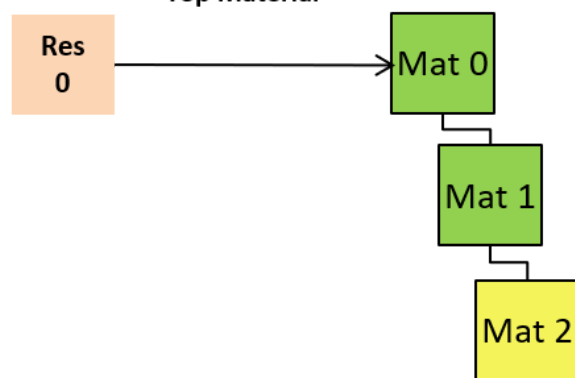
**After TrackIn  
Top Material**



**Before TrackOut**



**After TrackOut  
Top Material**

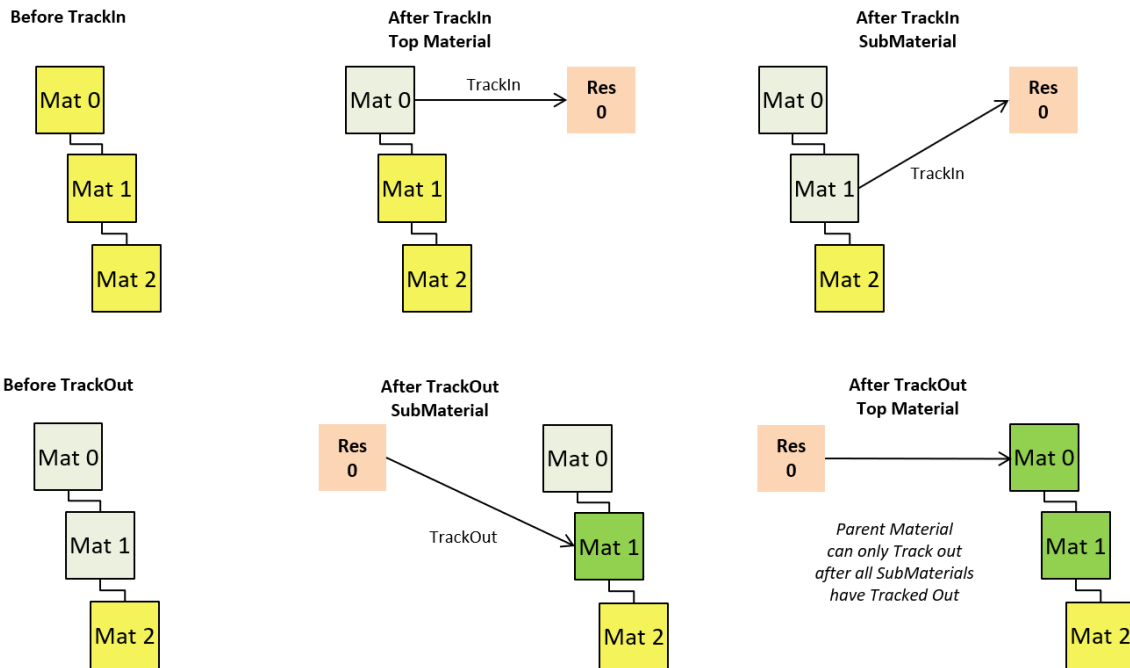


## Scenario 2

Sub-Material depth	Sub-Material tracking state depth	Allow Sub-Material tracking	SubResource configuration
3	1	True	no SubResources

Table: Sub-Material tracking scenario 2

In this case, the **Resource** allows Sub-Material tracking. The **Step** state depth defines tracking until level one, so each Sub-Material until level one needs to be individually tracked in and tracked out.



### Scenario 3

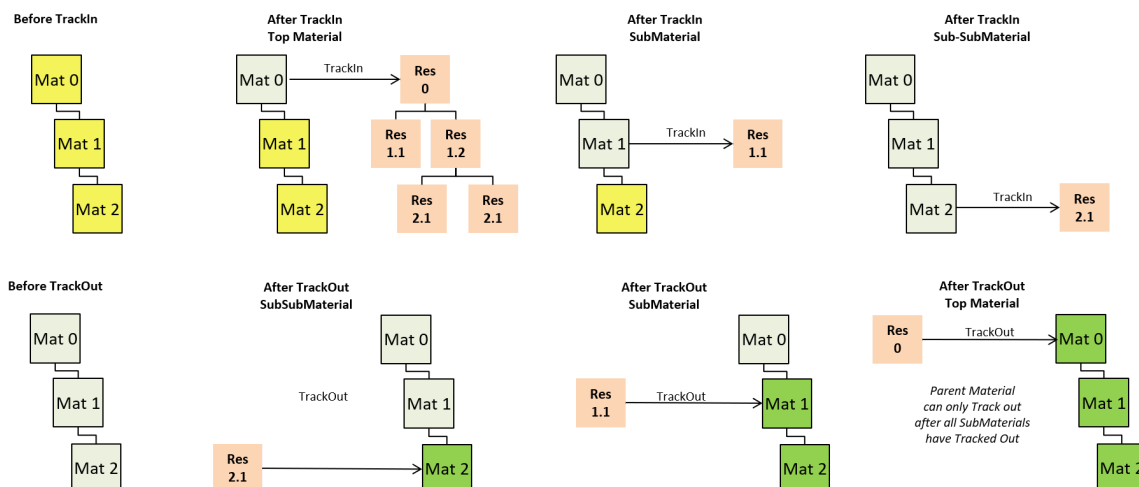
Sub-Material depth	Sub-Material tracking state depth	Allow Sub-Material tracking	SubResource configuration
3	2	True	3

Table: Sub-Material tracking scenario 3

#### Note

All **Resources** allowing Sub-Material tracking (for the matter, level two of **Resources** is irrelevant).

In this example, each **Material** and Sub-Material needs to be tracked-in and tracked-out individually.



## Scenario 4

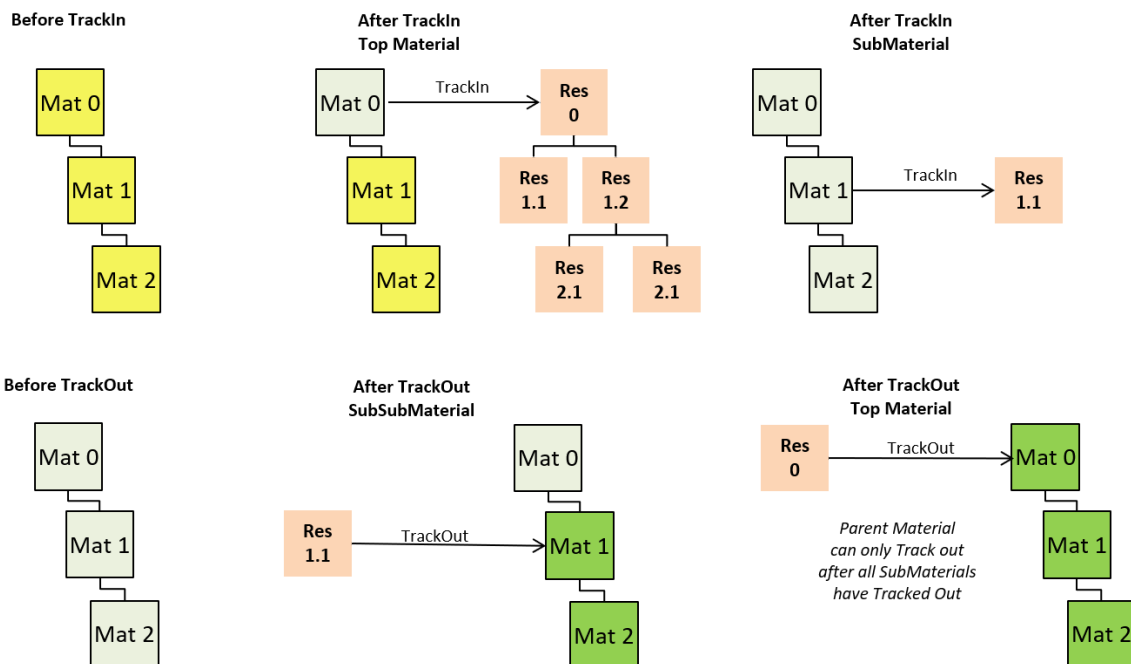
Sub-Material depth	Sub-Material tracking state depth	Allow Sub-Material tracking	SubResource configuration
3	2	True	3

Table: Sub-Material tracking scenario 4

### Note

Only the top-level Resource allows Sub-Material tracking.

In this example, the **Step** defines a tracking depth of two, but only the top level Resource supports Sub-Material tracking. That means that when the first level of Sub-Materials is tracked-in, the second level of Sub-Materials is also tracked-in together. Similarly, when tracking out the first level of Sub-Materials, the second level is also automatically tracked out.





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