# Aerospace & Defence PLM Action Group

# Multi View


# The story

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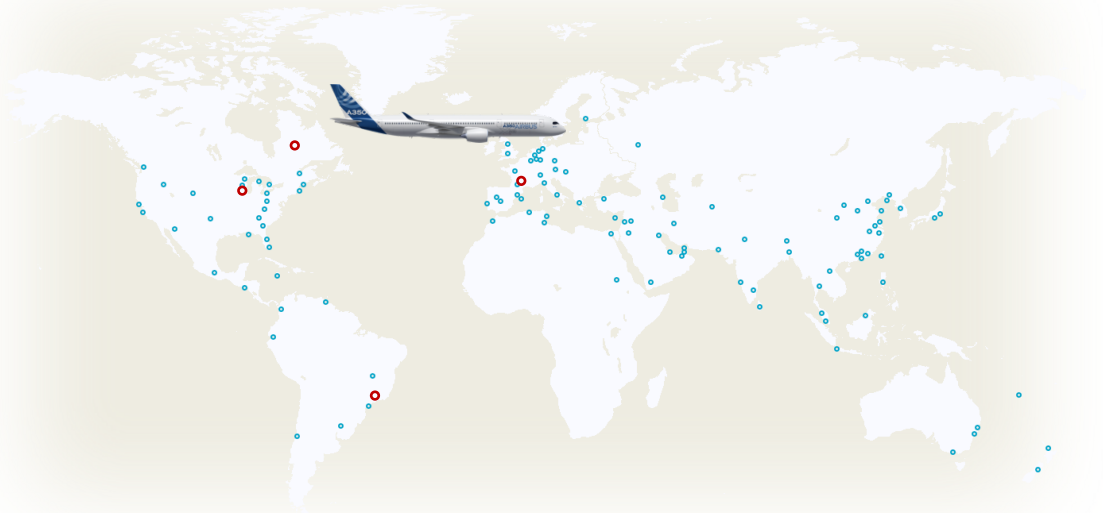
- Aerospace manufacturing independently developed PLM processes and tools for years largely without industry exchange
- Suppliers simultaneously working for OEM manufacturers with very different processes and tools baseline
- All developing  high cost PLM customized solutions to solve similar issues because there is no industry standard or best practice.



# The story

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CIMdata®

AIRBUS · BOEING · Gulfstream · DASSAULT AVIATION · EMBRAER · GE Aviation · Rolls-Royce · BOMBARDIER the evolution of mobility

- Aerospace & Defence PLM Action group created to address common issues faced by aerospace manufacturers.
  - A&D Primes & Engine Manufacturers
  - Advocate for industry best practices
  - Promote common requirements to standards bodies

# The team

# The team: physical workshops

AEROSPACE & DEFENSE PLM ACTION GROUP


**March 2017**
**Toulouse, France**

**September 2017**
**Seattle, USA**


# The outcome so far

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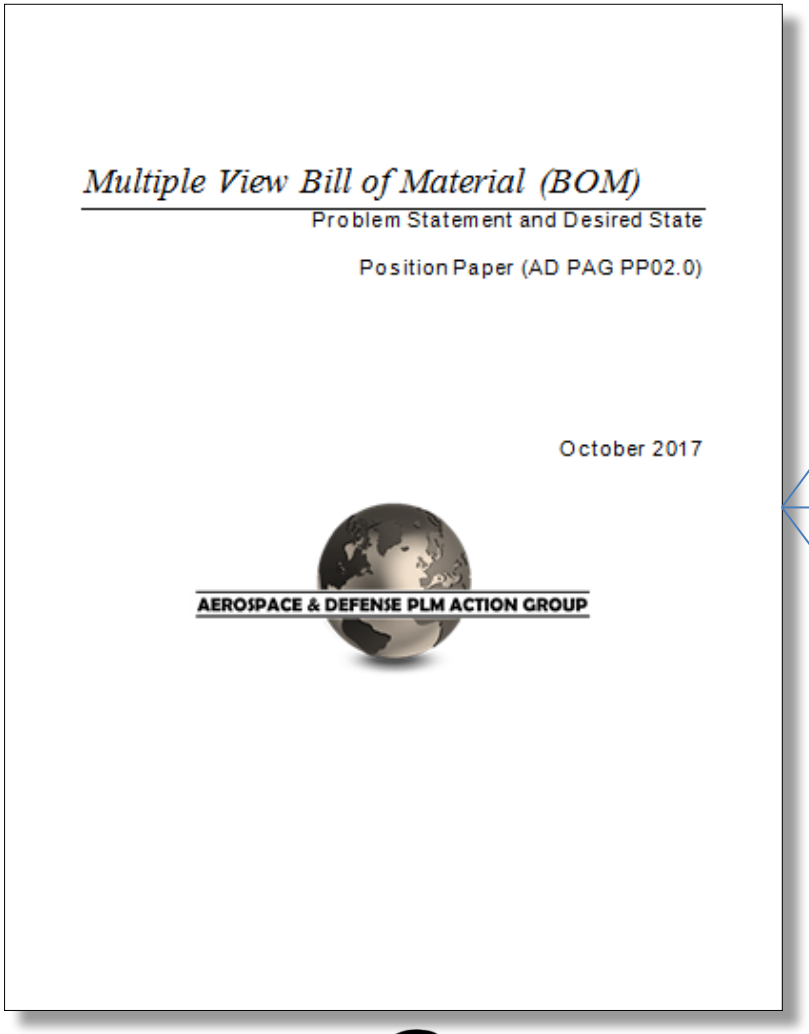


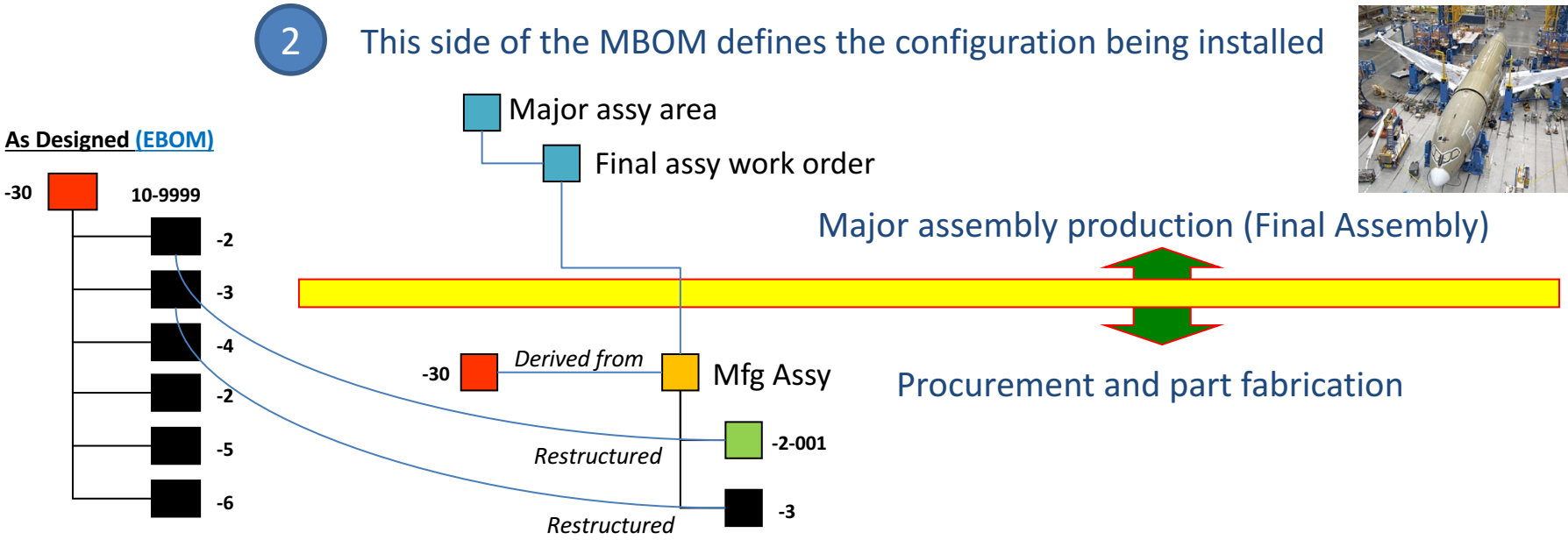

- Glossary
- Accountability Map
- Future subjects

# Accountability Map

## EBOM & MBOM Accountability Map: *provide a system to reconcile and enforce accountability between EBOM and MBOM.*

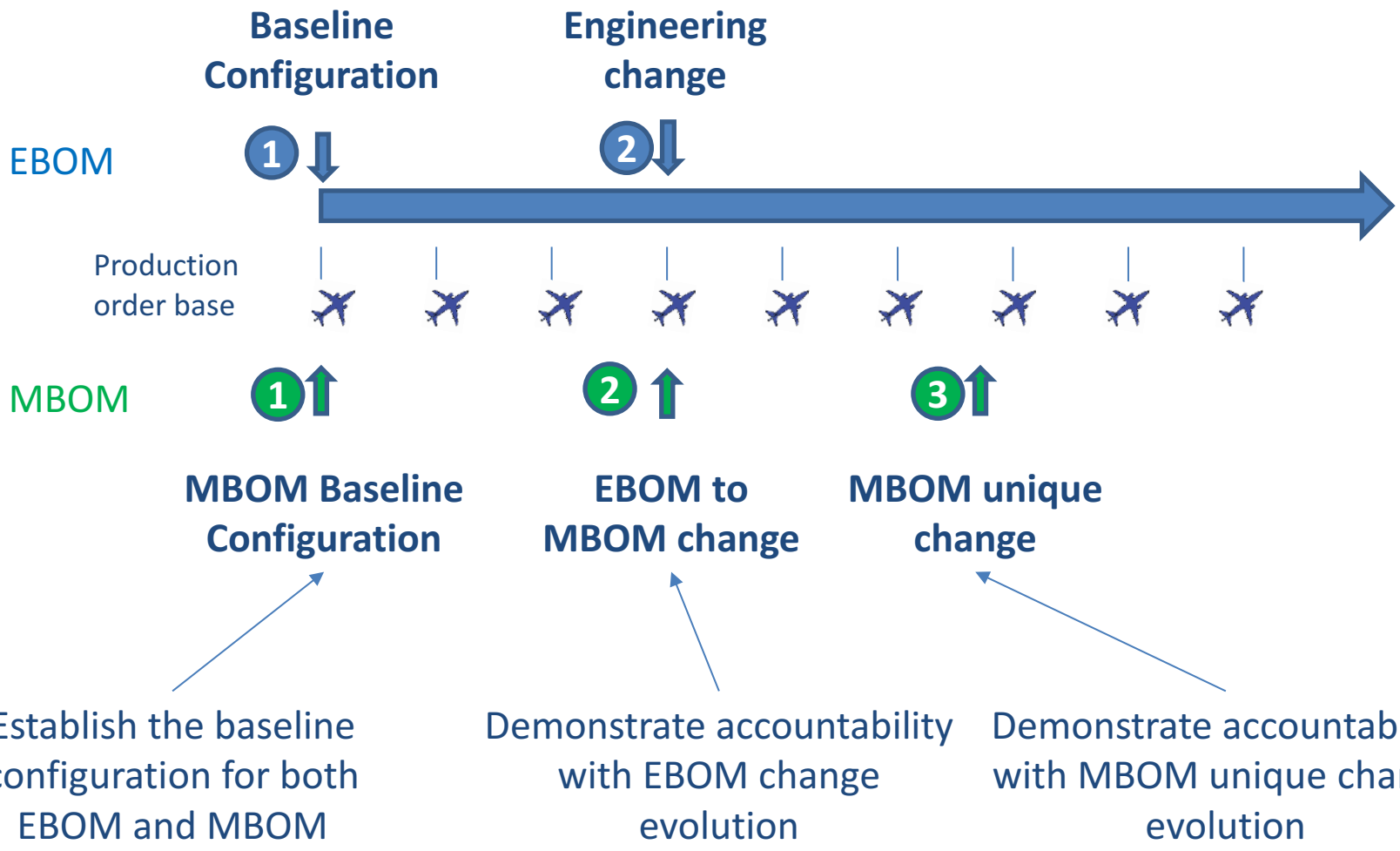
The MBOM has two key areas relevant for accountability:

1. Parts ordered from suppliers and internal fabrication sites.
2. Parts consumed into an airplane level process structure that accounts for the completeness and accountability of each airplane.



# Accountability change scenario

Accountability becomes more complex as change is introduced.



# Accountability Map

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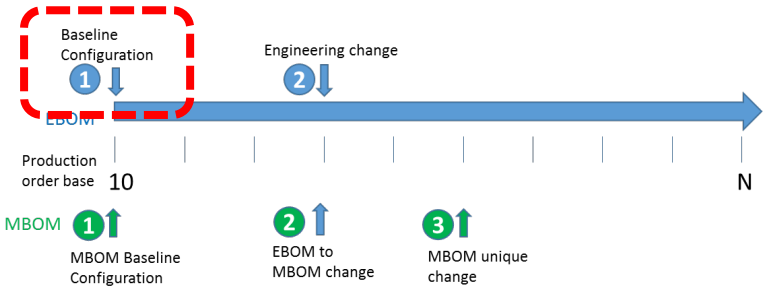
## Accountability change scenario

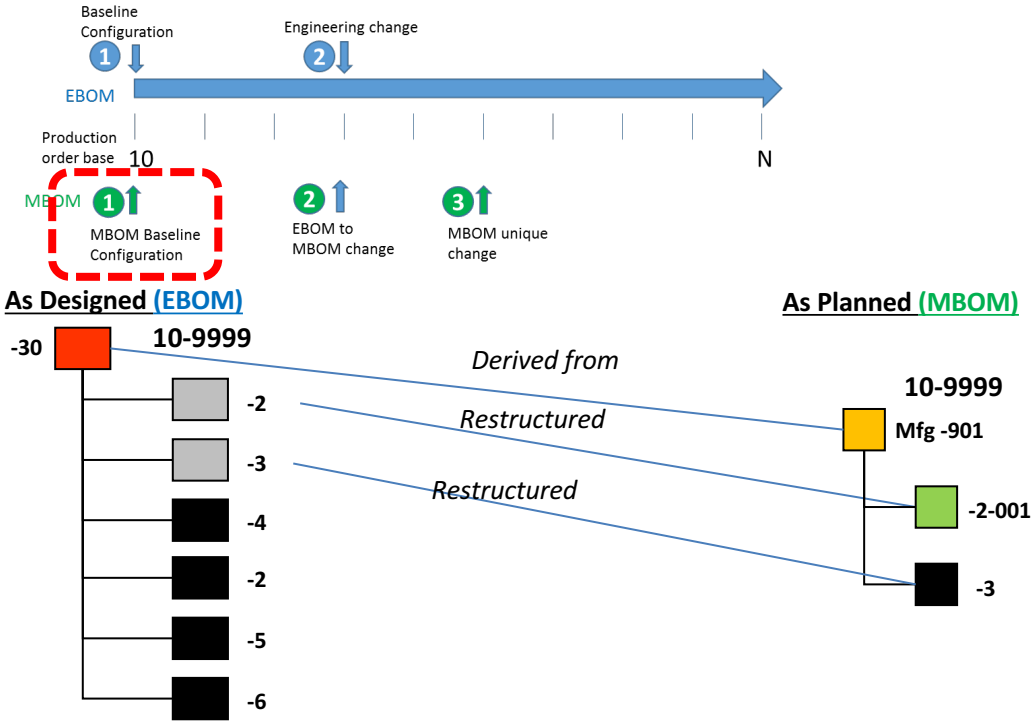



**As Designed (EBOM)**


- Design -30 released from Aircraft 10 and on.

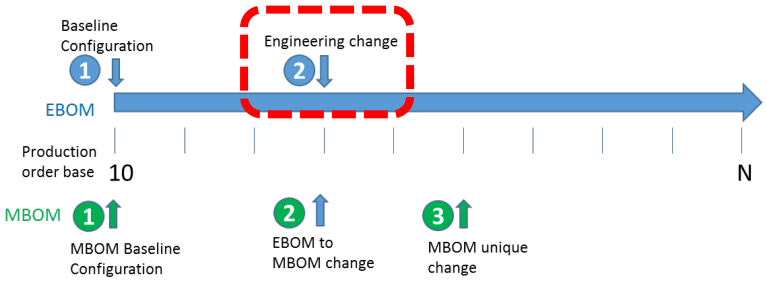
# Accountability Map

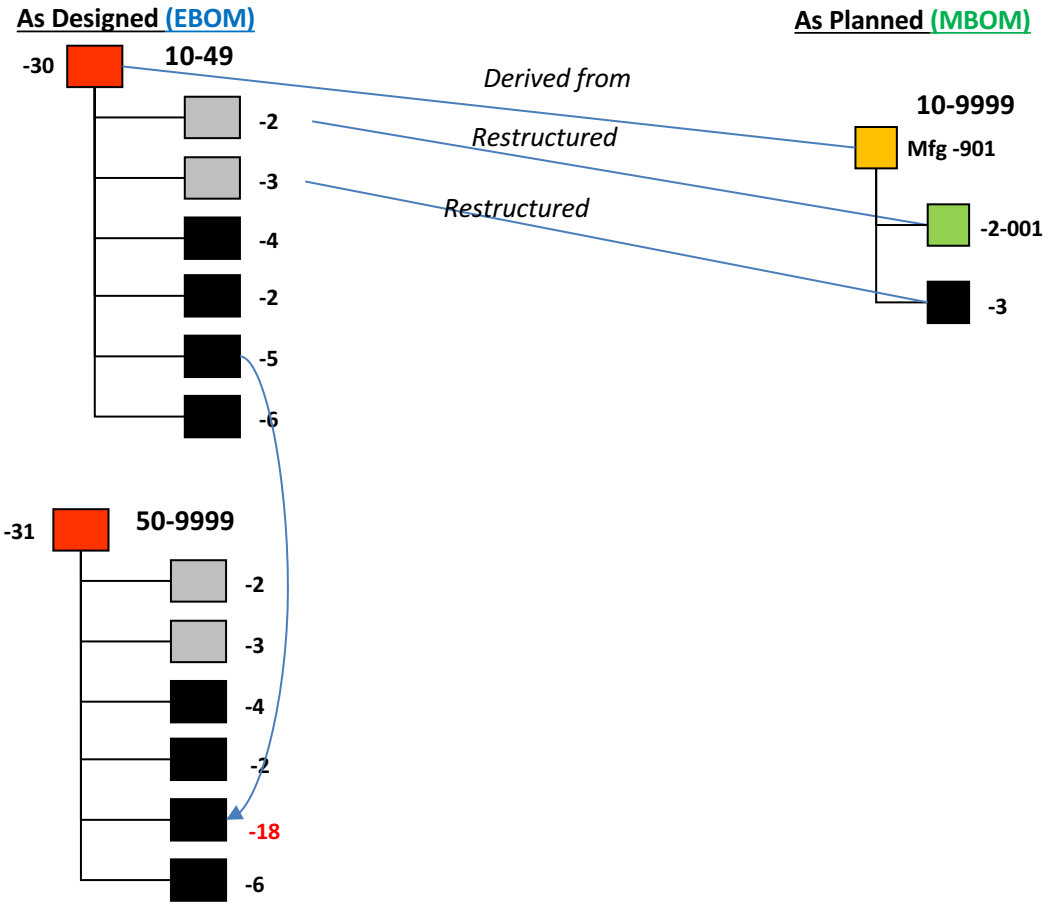
## Accountability change scenario




- Design -30 released from Aircraft 10 and on.
- Part -2 is restructured, now -2-001 omits pilot holes for use at location XYZ.
- New Manufacturing Assembly -901 has to be created.

# Accountability change scenario

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- Part 5 replaced by 18 from Aircraft 50 and on. Other MBOM to adapt to this change.

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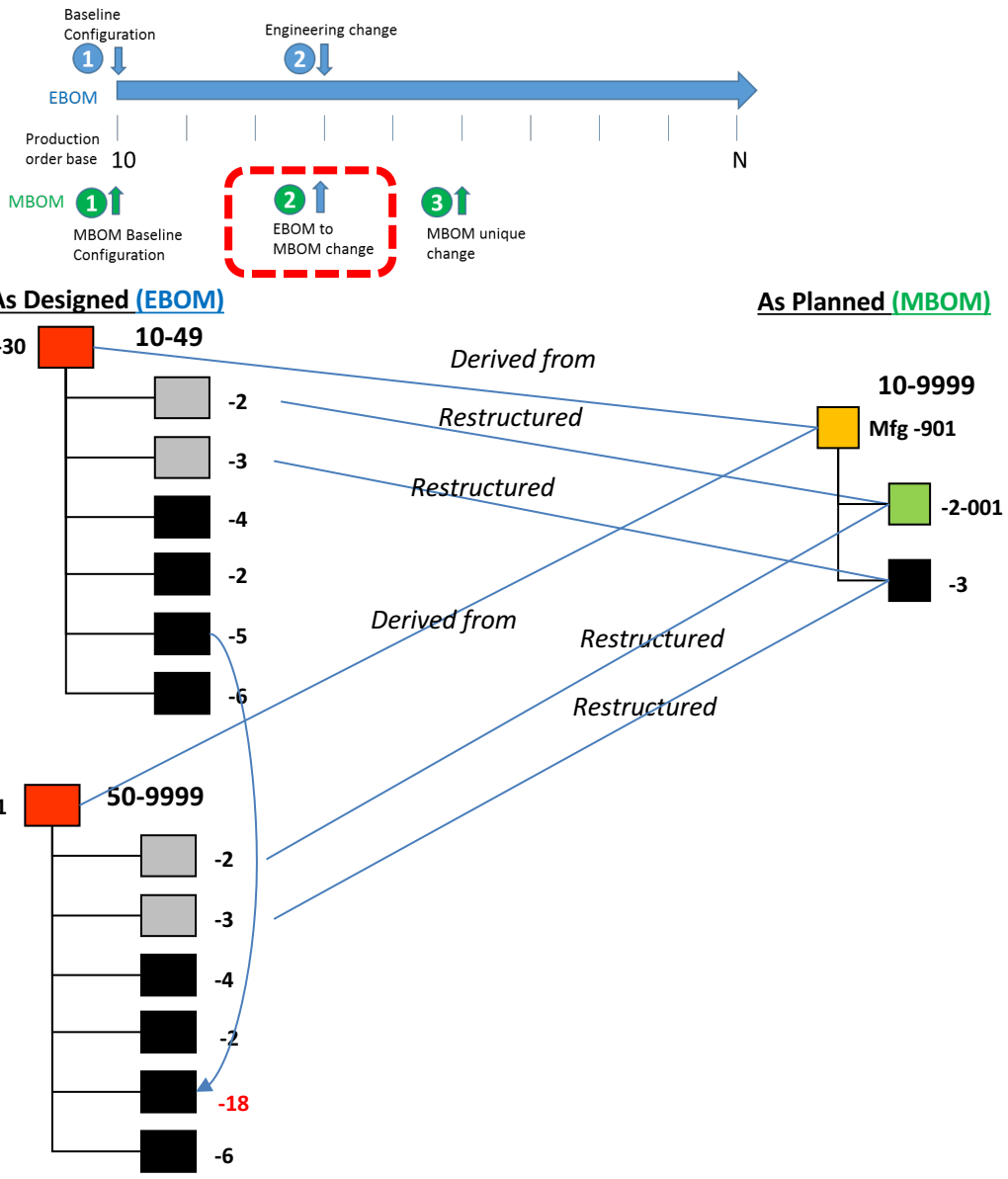


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- However the MBOM restructuring between -30 and -31 is common. PLM shall notify and allow the user to automatically re-apply the original restructures in the -30 to the new -31.

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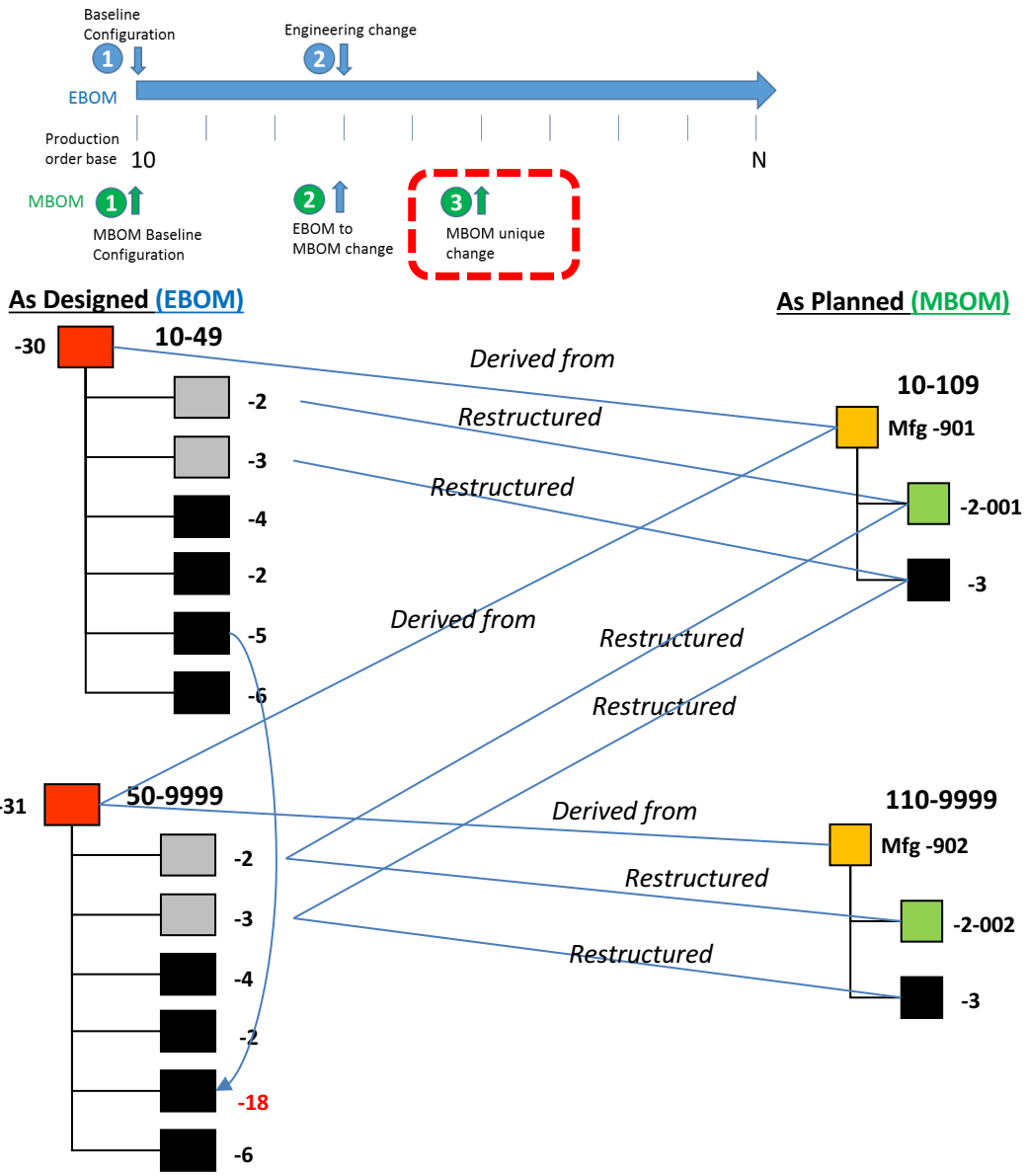


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- A manufacturing only change starts from aircraft 110, with new restructuring.

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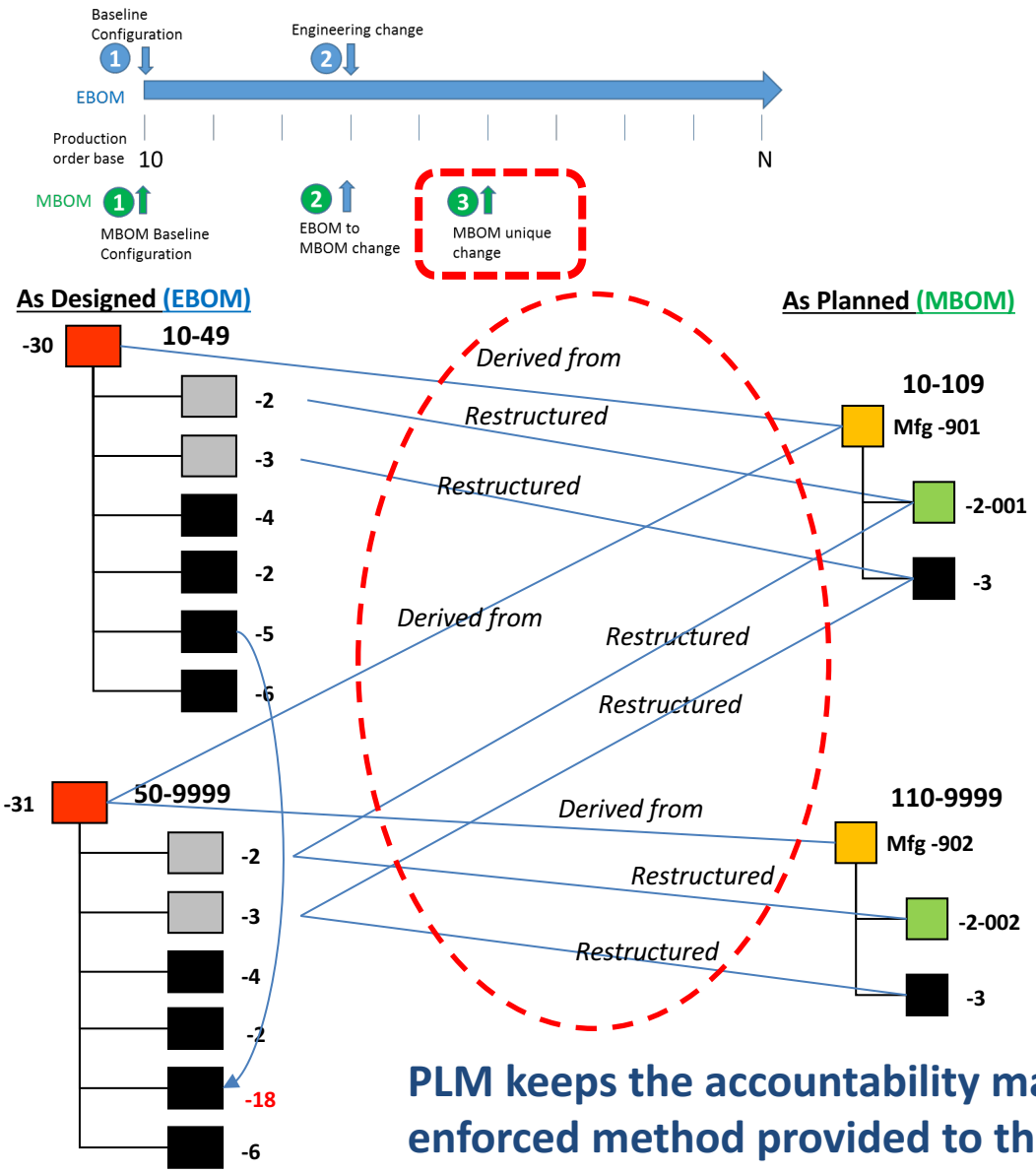


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**PLM keeps the accountability map current based upon the system enforced method provided to the user for restructuring.**

# Future subjects



- **Assembly requirements:** *Management of assembly level engineering requirements, including torque specifications, fastener stack ups, sealants, functional tolerance and annotation, etc, typically managed in monolithic containers such as text files. This inhibits the ability to individually manage the engineering requirements downstream and limits their visibility to end users.*

- **Data exchange/sharing with suppliers and partners:** *The vast array of PLM and CAD systems and customization on top, force suppliers and partners to have dedicated specialists for each OEM with which they do business. This represents a very large cost that is wasteful and ultimately transferred to the OEMs.*

## SCOPING ACTIVITY

- **Capturing evolving configuration for single Aircraft Identification Number:** *Improve management of interim configuration before the latest fly-away configuration and the evolution in many cases such as:*
  - *pre-delivery changes (concessions, out of sequence activities, late changes)*
  - *Post-delivery (SBOM) (repairs, service bulletins)*
  - *non-OEM changes*

# Roadmap

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# Roadmap

Develop Dictionary
Rules of engagement with Suppliers and PLM Editors

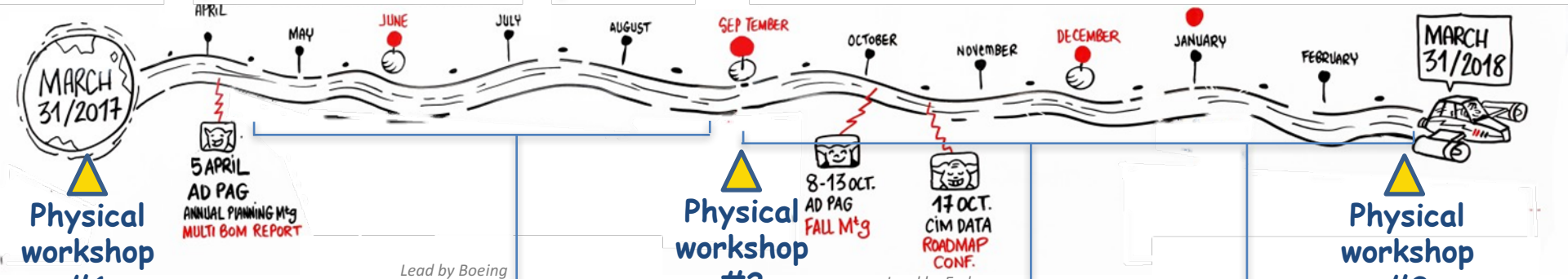
*Lead by Airbus*

Change/action propagation in the Multi BOM

*Lead by Boeing*

White Paper release

White Paper release




Physical workshop #1 Toulouse

Part level eBOM/mBOM accountability

*Lead by Boeing*

Physical workshop #2 Seattle

Engineering Process / Assembly Requirements

*Lead by Embraer*

Data Exchange

*Lead by GE Aviation*

Physical workshop #3 (TBC)

SCOPING: Evolving Configuration for one single AIN

*Lead by Airbus*