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Applicability considerations for a multi-customer environment

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Company/organization: BAE Systems

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Background

Superiority for Pilots

Eurofighter Typhoon is the world's most advanced multi/swing-role aircraft guaranteeing air dominance for the 21st century.

With more than 700 orders, Eurofighter Typhoon will provide superiority for the Air Forces of seven nations.

Eurofighter Typhoon provides:

Air Dominance

- Assured air dominance against any current and future threats
- A superior multi/swing-role weapon system
- Affordability
- A cost-efficient and operationally effective solution

Availability

- Supportable, deployable and interoperable

Growth Potential

- Continuous development with full customer involvement to maintain dominance as threats evolve

Customer Satisfaction

- An effective, proven and trusted aircraft programme which satisfies the various requirements of its customers

An International Partnership

- The biggest industrial collaboration in Europe
- A joint partnership between Germany, Italy, Spain and the United Kingdom

Eurofighter

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85399 Hallbergmoos
Germany
Telefon: +49 811 80 0
Fax: +49 811 80 1537
E-mail: info@eurofighter.com

www.eurofighter.com



Design Characteristics

Dimensions	
Wingspan	10.95 m
Wing aspect ratio	2.205
Length overall	15.96 m
Height overall	5.28 m
Wing area	51.2 sq m

Performance	
Max level speed	Mach 2.0
Runway length	700 m
'g' limits	+9g/-3g

Powerplant	
Two EJ200 engines	
Total combat thrust	180kN/40,000 lb



Wingspan 10.95m (36ft 11in)
Height 5.28m (17ft 4in)



Length Overall 15.96m (52ft 4in)

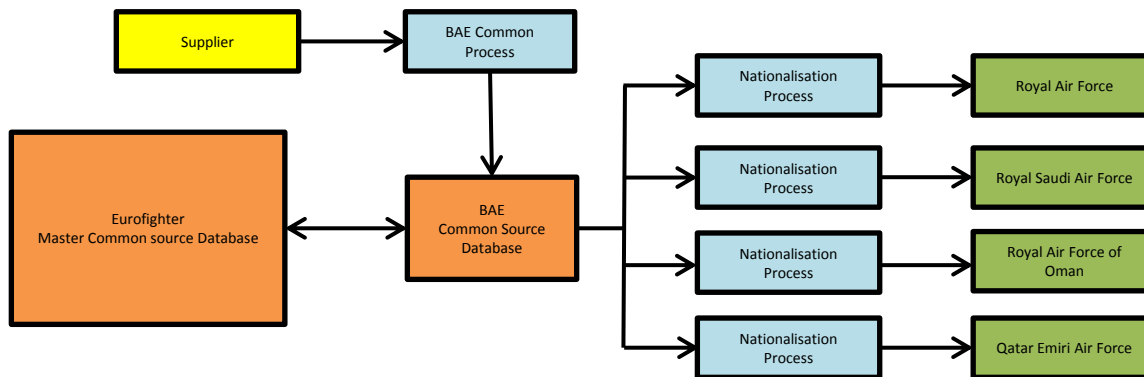


Wing Area 51.2m² (551m²)

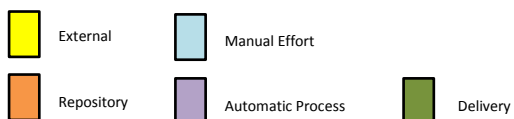
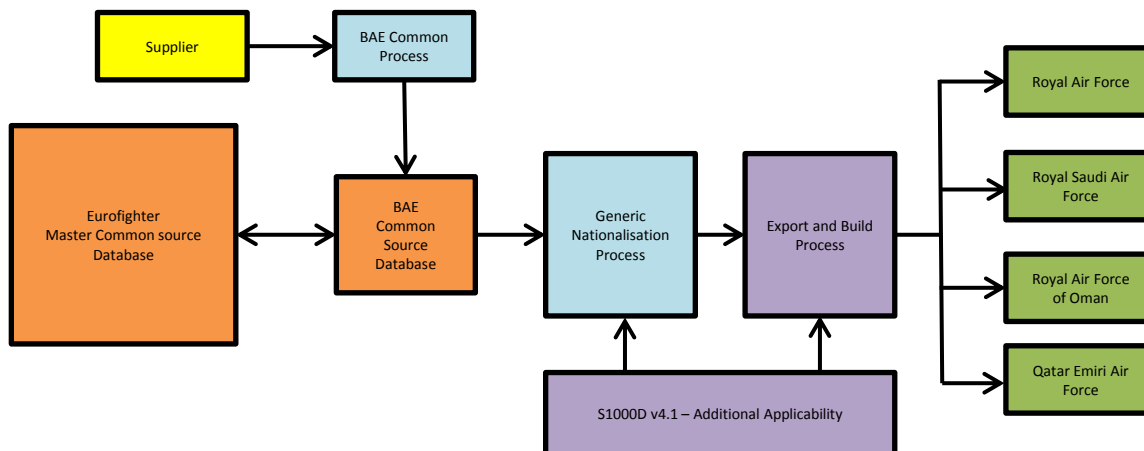


The Eurofighter Typhoon compilation process

1.8



4.1



Considerations

Boolean logic based applicability statements are perfect for the selection of appropriate data based on the customer's product,' however...

Things to consider

- Variable baselines
- Customer sensitivity
- Generic annotations
- Reason for Update

Variable Baselines

Generic - In-Line MOD applicability

- 6 Install the extractor tool (part of [SE1. 1B-1-29-1-A](#)) installed on the head (14). Push the extractor tool
- Applicability - Hydraulic Accumulator, PRE MOD-800191*
- 9 Remove the nut-ring (9) from the seat. Use the Sc
- Applicability - Hydraulic Accumulator, POST MOD-800191*
- 10 Remove the four clamps (9) from the seat.
- 11 Remove the ring (10) from the cylinder seat. Use t
- 12 Pull and remove the head (14) from the cylinder. I

Exported for Post MOD baselined Customer

- 7 Remove the rear screws (7) and the rear washers (7) fr
- 8 Install the extractor tool (part of [SE1. 1B-1-29-1-A-029j](#)) installed on the head (14). Push the extractor tool to m
- Applicability - Hydraulic Accumulator, POST MOD-800191*
- 9 Remove the four clamps (9) from the seat.
- 10 Remove the ring (10) from the cylinder seat. Use the S
- 11 Pull and remove the head (14) from the cylinder. Use th [Hydraulic Accumulator](#) .
- 12 Remove the extractor tool (part of [SE1. 1B-1-29-1-A-02](#))

Variable Baselines

Generic - Support Equipment applicability

Name	Identification/Reference	Quantity	Remark
<i>Applicability - 1B-1-93-1-B-1042</i>			
SE1. 1B-1-93-1-B-1042 - Platform Steps	CSN: ZB600A06 002	1 EA	
<i>Applicability - 1B-3-93-1-B-1484</i>			
SE4. 1B-1-93-1-B-1484 - Platform Steps	CSN: ZB600011 030	1 EA	
SE2 Torque Wrench (0.2 Nm to 4.0 Nm)	Part 5110 001	1 EA	

Exported customer view

Name	Identification/Reference	Quantity	Remark
<i>Applicability - 1B-3-93-1-B-1484</i>			
SE4. 1B-1-93-1-B-1484 - Platform Steps	CSN: ZB600011 030	1 EA	
SE2 Torque Wrench (0.2 Nm to 4.0 Nm)	Part 5110 001	1 EA	

Variable Baselines

Redundant Applicability Removal

- Identification and removal of unwanted applicability statements
- Customer specific
- Reusable
- Three states of use
 - Always Display
 - Never Display
 - Status Display

Customer Sensitivity

```

<applic id="A0001">
  <displayText><simplePara>Customer X, or Customer Y</simplePara></displayText>
  <evaluate andOr="or">
    <assert applicPropertyIdent="CustomerX" applicPropertyType="condition" applicPropertyValues="YES"></assert>
    <assert applicPropertyIdent="CustomerY" applicPropertyType="condition" applicPropertyValues="YES"></assert>
  </evaluate>
</applic>

<mainProcedure>
  <proceduralStep applicRefId="A0001">
    <para>When using the RADAR XYZ.....</para>
    <proceduralStep>
      <para>But screen return words mean nothing
    </para>
  </proceduralStep>
</mainProcedure>

<product>
  <assign applicPropertyIdent="CustomerX" applicPropertyType="prodattr" applicPropertyValue="YES" />
  <assign applicPropertyIdent="CustomerY" applicPropertyType="prodattr" applicPropertyValue="NO" />
  <assign applicPropertyIdent="CustomerZ" applicPropertyType="prodattr" applicPropertyValue="NO" />
  <assign applicPropertyIdent="MOD-123456" applicPropertyType="condition" applicPropertyValue="PRE" />
  <assign applicPropertyIdent="MOD-456789" applicPropertyType="condition" applicPropertyValue="POST" />

```


Customer Sensitivity

When delivered to ‘Customer X’

Procedure

Applicability - Customer X or Customer Y

1 When using the RADAR....



Procedure

Applicability - Customer X

1 When Using the RADAR.....



Customer Sensitivity

Pruning applicability statements

- Identification and removal 'False' assert statements
- Reconstruct or remove `<evaluate>` statement(s), where required

Before:

```
<applic id="A0001">
  <displayText><simplePara>Customer X, or Customer Y</simplePara></displayText>
  <evaluate andOr="or">
    <assert applicPropertyIdent="CustomerX" applicPropertyType="condition" applicPropertyValues="YES"></assert>
    <assert applicPropertyIdent="CustomerY" applicPropertyType="condition" applicPropertyValues="YES"></assert>
  </evaluate>
</applic>
```

After:

```
<applic id="A0001">
  <displayText>
    <simplePara>Customer X</simplePara>
  </displayText>
  <assert applicPropertyIdent="CustomerX" applicPropertyType="condition" applicPropertyValues="YES"/>
</applic>
```

Generic Annotations

Applicability - Customer X or Customer Y

1 When Using the RADAR.....

Applicability - PSC 4, 5, 6 and 7

2 Set to ON

Applicability - POST MOD 123 or POST MOD 755

3 Remove the

- A method to re-write the `<displayText>` to reflect the newly parsed applicability is needed

Generic Annotations

Auto Generated Display Text

- Top down approach to the reconstruction process
- Rules defined for the construction of applicability statements
 - Order of condition types
- `<evaluate andOr="">` separator usage defined
- Define a set of parameters for condition and attribute types
- Different values may be required
 - `<name>`
 - `<displayName>`
 - `<description>`
 - `applicPropertyIdent`
 - `applicPropertyValues`

Generic Annotations

```
<evaluate andOr="and">
  <assert applicPropertyId="Seat" applicPropertyType="condition" applicPropertyValues="Single"/>
  <evaluate andOr="or">
    <assert applicPropertyId="MOD-123" applicPropertyType="condition" applicPropertyValues="POST"/>
    <assert applicPropertyId="Range" applicPropertyType="condition" applicPropertyValues="001~15"/>
    <assert applicPropertyId="MOD-567" applicPropertyType="condition" applicPropertyValues="POST"/>
    <assert applicPropertyId="Range" applicPropertyType="condition" applicPropertyValues="120~155"/>
  </evaluate>
</evaluate>
```

Applicability - Single POST MOD-123 or 001~015 or POST MOD-567 or 120~155



1 When Using the RADAR.....

```
<evaluate andOr="and">
  <assert applicPropertyId="Seat" applicPropertyType="condition" applicPropertyValues="Single"/> <evaluate
andOr="or">
  <assert applicPropertyId="Range" applicPropertyType="condition" applicPropertyValues="001~15"/>
  <assert applicPropertyId="Range" applicPropertyType="condition" applicPropertyValues="120~155"/>
  <assert applicPropertyId="MOD-567" applicPropertyType="condition" applicPropertyValues="POST"/>
  <assert applicPropertyId="MOD-123" applicPropertyType="condition" applicPropertyValues="POST"/>
</evaluate>
</evaluate>
```

Applicability - Single 001~015 or 120~155 or POST MOD-123 or POST MOD-567



1 When Using the RADAR.....

Reason for Update

- Maintaining a single dataset for use in disparate operating environments may result in unnoticeable changes
- Capability changes may not be reflected in customer support package
- Customer driven comments
- Deviations / specific requirement changes
- Solution
- Two `<reasonForUpdate>` statements for any given capability change
- Applicability based on capability and inverse of capability

Reason for Update

Applicability - POST MOD-123

Reason For Update:..... Introduction of MOD-123

Applicability - PRE MOD-123

Reason For Update:..... Status Change

```
<applic id="A0001">
  <displayText>
    <simplePara>POST MOD-123</simplePara>
  </displayText>
  <assert applicPropertyIdent="MOD-123" applicPropertyType="condition" applicPropertyValues="POST"/>
</applic>

<applic id="A0002">
  <displayText>
    <simplePara>PRE MOD-123</simplePara>
  </displayText>
  <assert applicPropertyIdent="MOD-123" applicPropertyType="condition" applicPropertyValues="PRE"/>
</applic>
```

Thank you
for your attention!

Questions?

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