



# Process-Oriented Technical Publications - Experiences, Challenges & Benefits

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# Agenda

step1  
 specpara warning  
 para The chocks must be safely installed and the aircraft must not move. This will help prevent injury to personnel and/or damage to the equipment. para  
 warning  
 para Put the Aircraft Chocks ( [xref xrefid="se0001" xtype="supergap"](#) ) in front of and behind the nose wheel and the LH/RH main wheel (as necessary). para  
 specpara  
 step1

- Introduction
- Experiences during authoring
- Experiences during use
- Challenges
- Benefits & outlook

step1  
 para Set the parking brake to the position OFF:  
 randlist prefix="order"  
 item For the single seat aircraft, refer to [refdm](#) [avee](#) [modelc](#) 1B [modelc](#) [sdc](#) B [sdc](#) [chapnum](#) 32 [chapnum](#) [section](#) 4 [section](#) [subject](#) 0 [subject](#) [subject](#) 00 [subject](#) [discode](#) 00  
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 item For the twin seat aircraft, refer to [refdm](#) [avee](#) [modelc](#) 1B [modelc](#) [sdc](#) B [sdc](#) [chapnum](#) 32 [chapnum](#) [section](#) 4 [section](#) [subject](#) 0 [subject](#) [subject](#) 00 [subject](#) [discode](#) 00  
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 randlist  
 para  
 step1

step1  
 para Disconnect the applicable cable of the LH or RH landing/taxi light:  
 randlist prefix="order"  
 item For the LH landing and taxi light, refer to [refdm](#) [avee](#) [modelc](#) 1B [modelc](#) [sdc](#) B [sdc](#) [chapnum](#) 33 [chapnum](#) [section](#) 4 [section](#) [subject](#) 4 [subject](#) [subject](#) 01 [subject](#) [discode](#) 00  
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 item For the RH landing and taxi light, refer to [refdm](#) [avee](#) [modelc](#) 1B [modelc](#) [sdc](#) B [sdc](#) [chapnum](#) 33 [chapnum](#) [section](#) 4 [section](#) [subject](#) 4 [subject](#) [subject](#) 05 [subject](#) [discode](#) 00  
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 randlist  
 para  
 step1

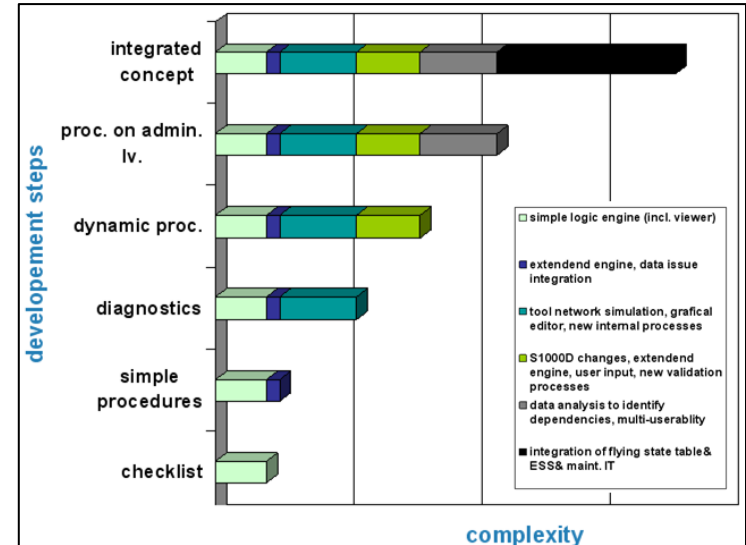
step1  
 para Remove the applicable Main Landing Gear (MLG) door together with the landing/taxi light:  
 randlist prefix="unordered"  
 item For the LH side, refer to [refdm](#) [avee](#) [modelc](#) 1B [modelc](#) [sdc](#) B [sdc](#) [chapnum](#) 52 [chapnum](#) [section](#) 8 [section](#) [subject](#) 1 [subject](#) [subject](#) 01 [subject](#) [discode](#) 00 [discode](#)  
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 randlist  
 randlist prefix="unordered"  
 item For the RH side, refer to [refdm](#) [avee](#) [modelc](#) 1B [modelc](#) [sdc](#) B [sdc](#) [chapnum](#) 52 [chapnum](#) [section](#) 8 [section](#) [subject](#) 1 [subject](#) [subject](#) 03 [subject](#) [discode](#) 00 [discode](#)  
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 randlist

## Introduction - motivation

- Maintenance technicians often are in search of adequate information
- We want to provide a continuous guideline for maintenance processes
- We want to move away from static behaviour and towards reactive technical publications
- S1000D Issue 2.3 initially defined process data modules; issues 4.x refined them
- Industrial usage has been possible for years, but coverage of in-service products is poor

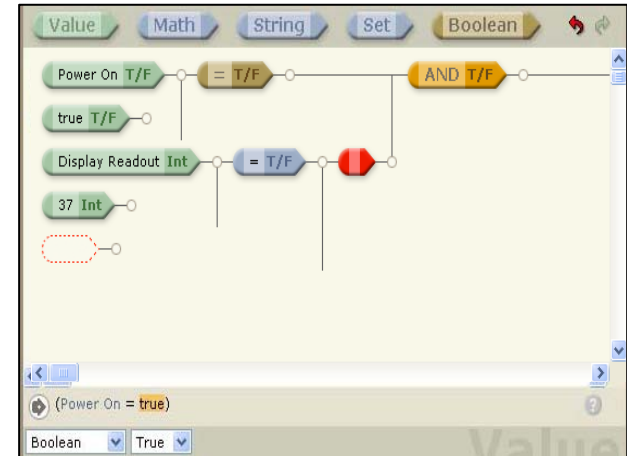
# Introduction – framework conditions

- End-to-end maintenance process covered with fault isolation – visual inspection – remove – install – test activities →
- Use case implemented by a set of process data modules
- No hybrid architecture comprising process and conventional data modules (reference to IETP for In-Service Support – an innovative solution)
- Test with industry-internal maintenance technicians

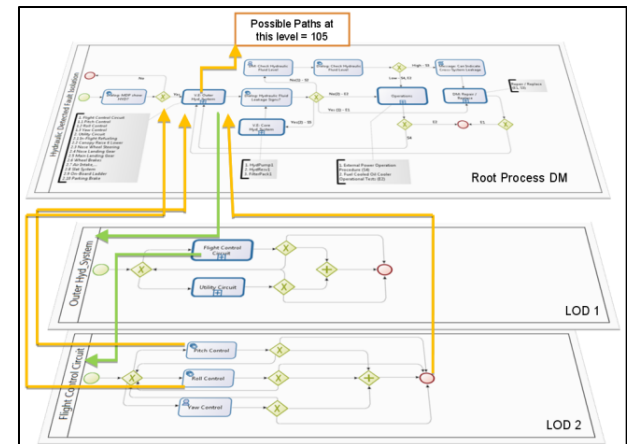


# Experiences during authoring 1)

- Commercial authoring tools still have potential for optimisation/maturity
- Additional competencies required, e.g. for process decomposition or creation of expressions

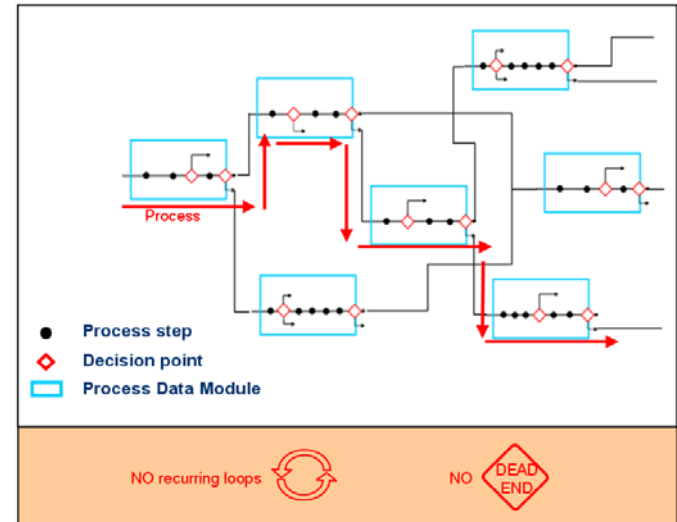


- A huge quantity of process branches develops very quickly – adequate definition of process DM granularity is essential



## Experiences during authoring 2)

- Difficult to keep the integrity of the overall process logic
- Balancing of straight vs. flexible processes including lots of user dialogue
- Depending on organisation – with process DM creation, an author can quickly leave his area of responsibility as process  $\neq$  local procedure



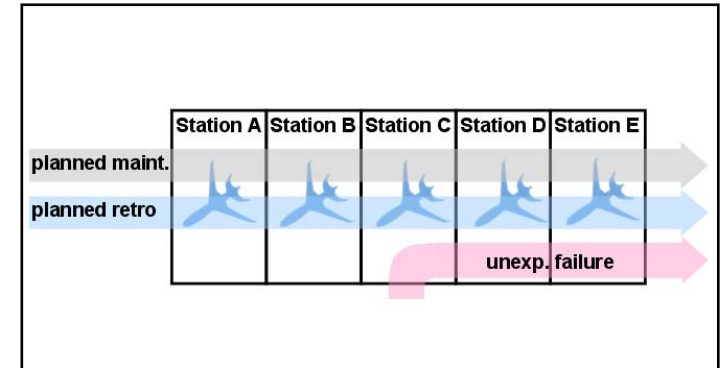
# Experiences during use 1)

- Implementation on a tablet PC
- The less experienced a maintenance technician is, the more he accepts the benefits of process orientation
- The automatic logging of process steps is widely accepted by all users
- Graphical process navigation/view capability is vital



## Experiences during use 2)

- Reactivity to unexpected failures is difficult – interrupt running process and execute new process BUT take account of steps already executed
- Reusability of designed processes is difficult
- Coupling of experience DBs highly recommended to influence sort sequence in a maintenance process automatically (e.g. fault isolation)
- Experienced users want to decide on their own on e.g. which test processes to execute
- Integration of process-oriented Tech Pub system to other systems e.g. work planning or warehousing is recommended





## Challenges

- Moving to process orientation may mean that not only authors leave their defined areas of responsibility – validation and certification authorities maybe also
- Creation of a process decomposition concept – branch control, reusability, determinateness of overall process
- Additional software (functionality) required – e.g. logic simulation for a network of process DMs, process branch control
- Management of multiple users not yet sufficiently supported by current process DM schema
- Other ILS implications, e.g. process-oriented LSA?

## Benefits & Outlook

- Benefits

Provide a single thread with no information breaks, reduce searching time, improve security of the maintenance process, automate logging of work performed, collect, keep and analyse feedback from maintenance technicians

- Outlook

Additional preparation effort will add cost for creators – time will tell if customers will pay for the benefits of process-oriented technical publications.

In rolling out process-oriented technical publications, it is strongly advised that the complexity be limited and controlled by dealing with simple use-cases such as checklists, before extending incrementally to diagnostic processes at most (see slide 4)

# Thank you

## for your attention



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