

# The best way to improve safety, quality and compliance in maintenance

S1000D User Forum  
September 2013



## Etteplan



- Specialist in providing industrial equipment engineering and technical product information solutions and services
- 40 years of experience
- Over 1800 designers and specialists
- Leading positions in Benelux and Scandinavia, amongst 15 biggest in Europe
- Offices (45) in Netherlands, Finland, Sweden, Denmark, USA, Russia and China
- Shares in NASDAQ OMX Helsinki Ltd. (ETT1V)

## Services

### Systems and products



Engineering  
Management



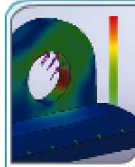
Form  
and Design



Control  
Systems



System  
Engineering



Mechanical  
Engineering



Embedded  
Systems



Verification  
& Validation



Technical  
Product  
Information



Automation

### Industrial and technical infrastructure



Plant  
Engineering



Electrical Power  
System



Technical IT

# Customers



# Content Strategy

Getting the right information to your end user  
at the right time and at any location

## Marketing & Sales



## Preparation & Installation



## Training



## Operation



## After-Sales Service

## Maintenance, Repair and Overhaul



## Parts ordering



## Feedback




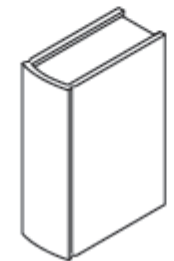
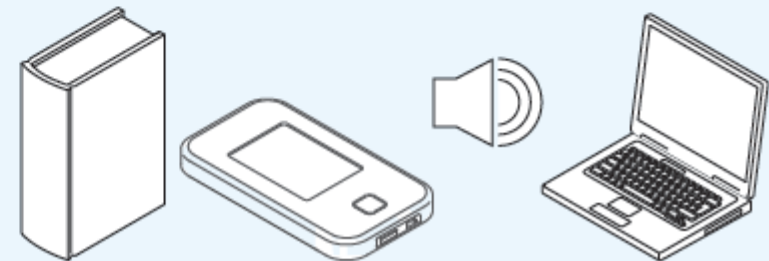


## Saving Maintenance Cost

- 25%-50% of a mechanics time goes into retrieving data
- How understandable are job cards and maintenance procedures?
  - An FAA survey of aircraft technicians revealed that, although user evaluations of the accuracy and quality of technical manuals are generally good, the manuals themselves were noted as having poor usability.
  - American Airlines had to ground their fleet of MD80s due ambiguity in the documentation.
  - Failure to convert English measures to metric values caused the loss of the Mars Climate Orbiter, a spacecraft that smashed into the planet instead of reaching a safe orbit. Total project cost: \$327.6M.
  - A badly worded sentence in a contract cost a Canadian defense company \$2.3M.

# Introducing The Tedopres Model

Applying universal specifications for content


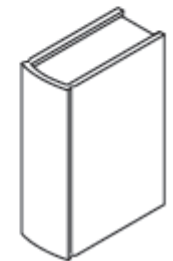
STATIC		DYNAMIC	
Create Content	Simplify & Reduce Content	Re-use Content	Integrate & Exchange Content
Trained & experienced authors	Simplified Technical English	Single Sourcing	Topic-based authoring
Trained & experienced illustrators	Simplified Illustrations		
High basic quality in writing, illustrating & translating content	Reducing ambiguity Enhancing safety	Enhancing usability Text & Visual search	Reduce time Easy data exchange/ integration
Book (Text, Graphics) Computer (Text, Graphics)	Book (Text, Graphics) Computer (Text, Graphics)	Book (Text, Graphics) Computer (Text, Graphics) Computer (Text-to-Speech)	Computer (Augmented Reality) Computer (Animation/ Simulation)
			



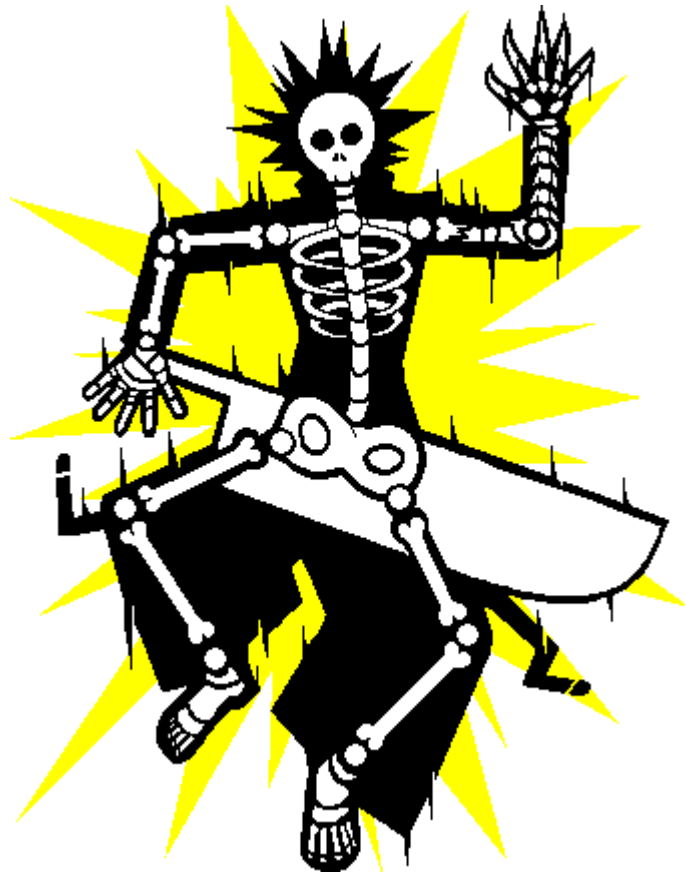
Standardization for text

Simplified Technical English (ASD-STE100)

# The Tedopres Model

STATIC	
Create Content	Simplify & Reduce Content
Trained & experienced authors	Simplified Technical English
Trained & experienced illustrators	Simplified Illustrations
High basic quality in writing, illustrating & translating content	Reducing ambiguity Enhancing safety
Book (Text, Graphics) Computer (Text, Graphics)	Book (Text, Graphics) Computer (Text, Graphics)
	

- Simplified Technical English (STE)
  - Controlled Language
    - Originally developed for aerospace & defense industry but widely used in other industries
  - Improve the clarity of technical writing
    - Reduce ambiguity
  - Example:
  - Turn off the engines not required
    - Turning off the engines is not required (40%)
    - Turn off engines that are not required (60%)





- Simplified Technical English (STE)
  - Controlled Language
    - Originally developed for aerospace & defense industry but widely used in other industries
  - Improve the clarity of technical writing
    - Reduce ambiguity
  - Example 2:
  - Cut the power



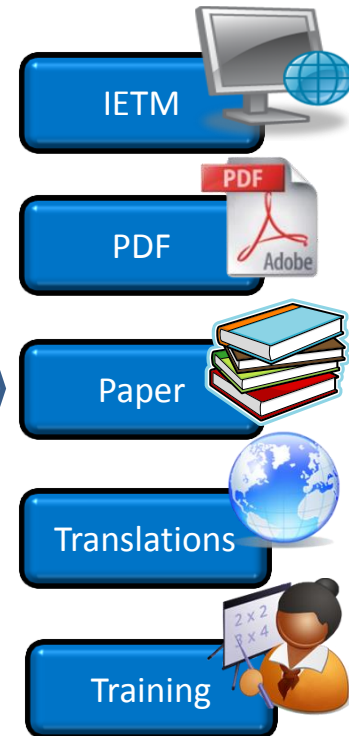
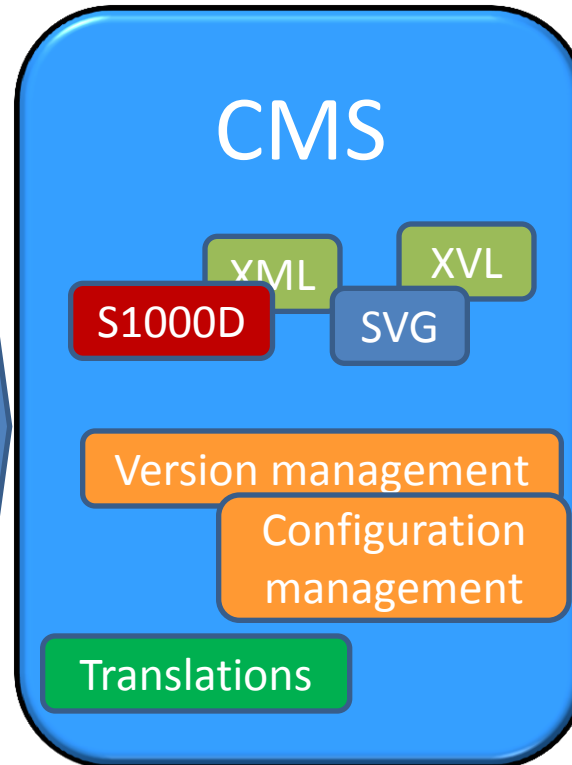
# What do we manage and publish?

## STE: clear and consistent source

Turn off the engines that are not required. 

Turn off the engines not required  
Turning off the engines may not be required.  
Ensure you turn off the engines.  
All engines should be turned off.  
Switch off the engines that may not be required.  
Put the engines in the off position.  
Not all engines should be switched off.  
The system should be turned off, but not all.  
Check to make sure the engines are OFF.  
To make sure the engines are off, check them.  
Makes sure the systems are in the off position.  
Verify the engines are not in the ON position.  
Please check to make sure the engines are OFF.  
Switching off the engines may not be allowed. 

Unclear, too many words,  
not consistent source



## Case Study – Rolls-Royce

- Compliance with ASD Simplified Technical English (ASD-STE100)
- Better quality and readability of manuals

### For writers:

- Approximate 81% reduction of grammatical errors and 90% reduction in Simplified Technical English errors.
- Approximate 52% reduction in time to find Simplified Technical English and grammatical errors.



**Rolls-Royce**



### For Quality Assurance:

- Approximate 48% reduction in time to review documents for grammatical and Simplified Technical English errors.
- Approximate 25% increase in grammatical and Simplified English errors found in documents.



**Etteplan** | tedopres

## Testimonials

- ***“We saved 30% in tech writing labor cost.”***  
- ***Rolls-Royce***
- ***“We saved 30% in translation cost.”***  
- ***L-3 Communications***
- ***“If our manuals are ambiguous, we are at risk.”*** - ***FAA***





# Before and after example

“If our manuals are ambiguous, we are at risk.”

FAA

## Industry examples

### ENVIRONMENTAL CONTROLS

1. All incoming air shall be filtered. Filters shall be checked and or replaced as required, to insure proper operation. Temperature of sealant crib should be between 65° F and 80° F.
2. The area shall be enclosed. Doors shall be kept closed to insure that unfiltered air does not enter the area during mixing operation.
3. All materials, tools or equipment taken into the Sealant Shop must be free of dirt, dust, grease or other foreign contaminants that may cause cure inhibition of mixed sealant.
4. No process or operation which produces uncontrolled spray, dust, fumes, or other matter is permitted within the Sealant Shop.
5. All Sealant Shop surfaces which are used for mixing of sealants shall be cleaned to prevent contamination, floors shall be swept clean to prevent accumulation of dust, dirt and debris.
6. Silicone base or other mold release type materials are not permitted. Keep such material out of the Sealant Shop. Their use will cause mix sealant not to adhere to substrates when used.

## Aerospace & Defence



### ENVIRONMENTAL CONTROLS

1. It is necessary that incoming air is filtered. Make sure that there is no blockage of the filters. Replace the filters that do not operate correctly. Make sure that the temperature of the sealant crib is between 65° F and 80° F.
2. Close the doors during operation. Do not let unfiltered air go into the area.
3. Make sure that all material that goes into the Sealant Shop is clean.
4. Make sure that all the surfaces in the Sealant Shop are clean.
5. These materials are not permitted in the Sealant Shop:
  - Material that produces spray, dust or fumes
  - Material that uses silicone
  - Material that releases mold

## results

35%  
word reduction

- clearer instructions
- consistency of words, increase of reuse (15%)
- cheaper, better and faster translations

Before


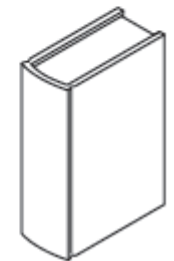


Airbus A380

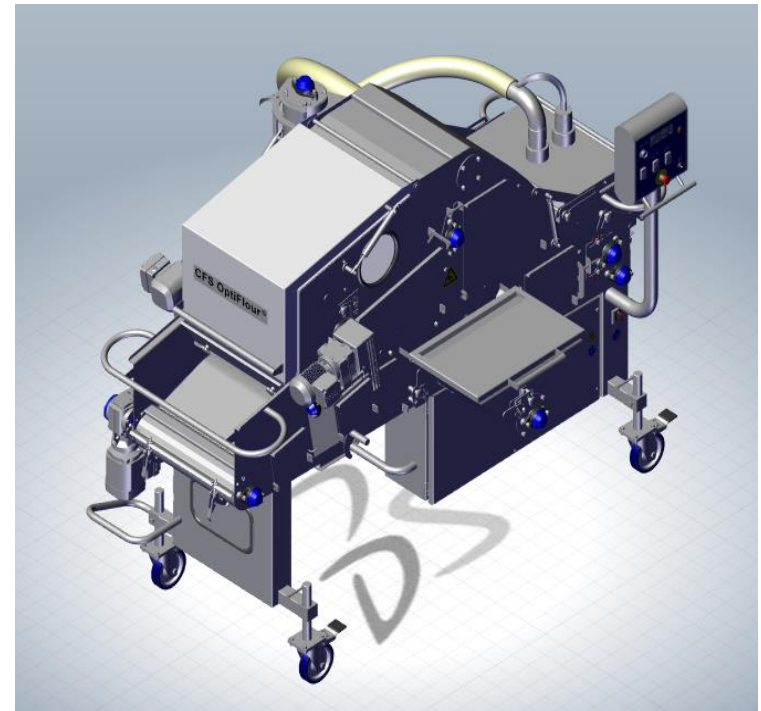
After

# Standardization on Illustrations

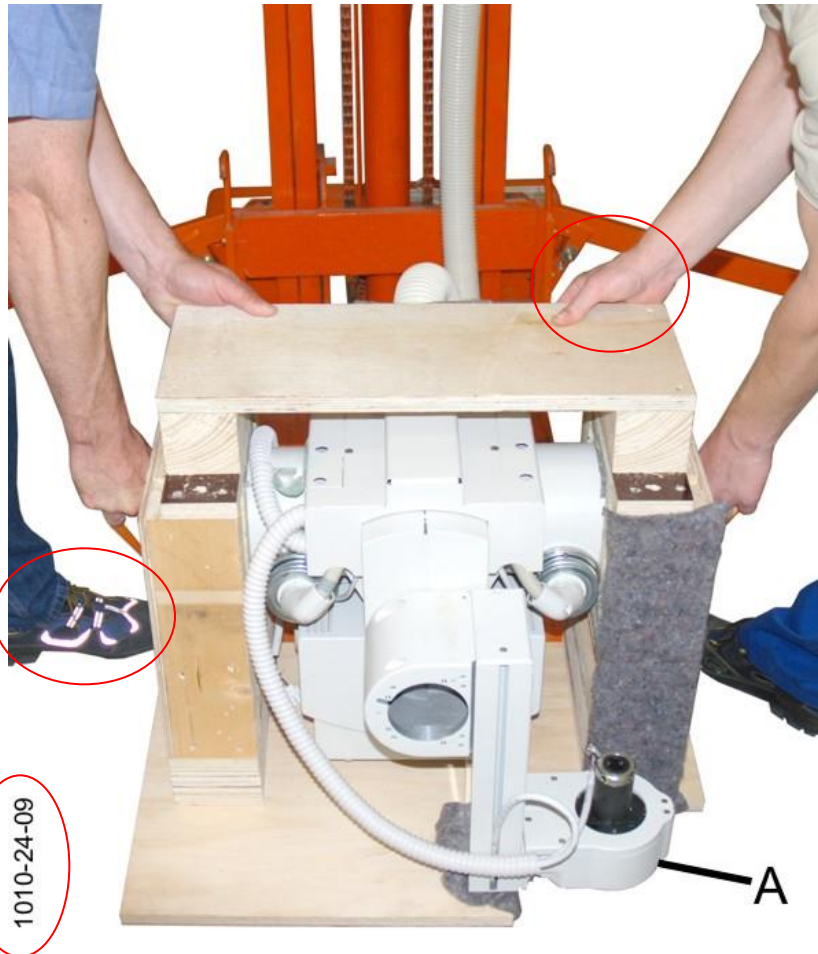
# The Tedopres Model

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- 3D illustrations as a source



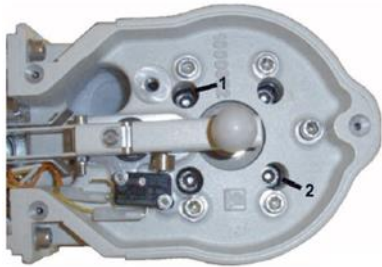
## Why not use photos



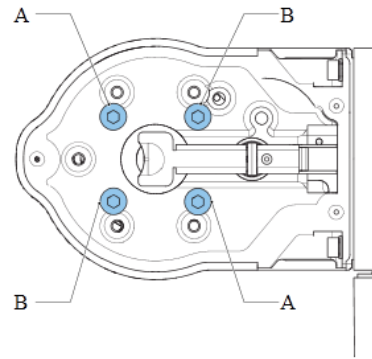
1. Contains redundant information
2. Users are not wearing safety gloves and working boots
3. Contains an unclear code on the left corner that is not used in any related procedures

## Photo vs illustrations

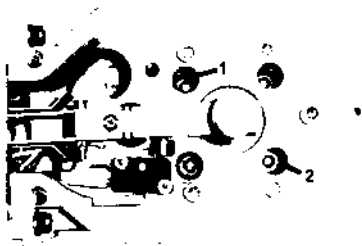
**Before 1**



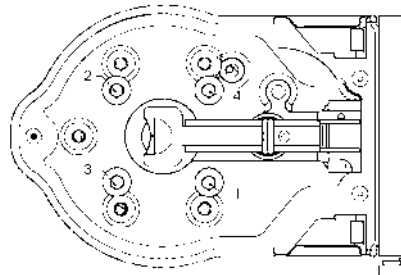
**After 1**



**Before 2**

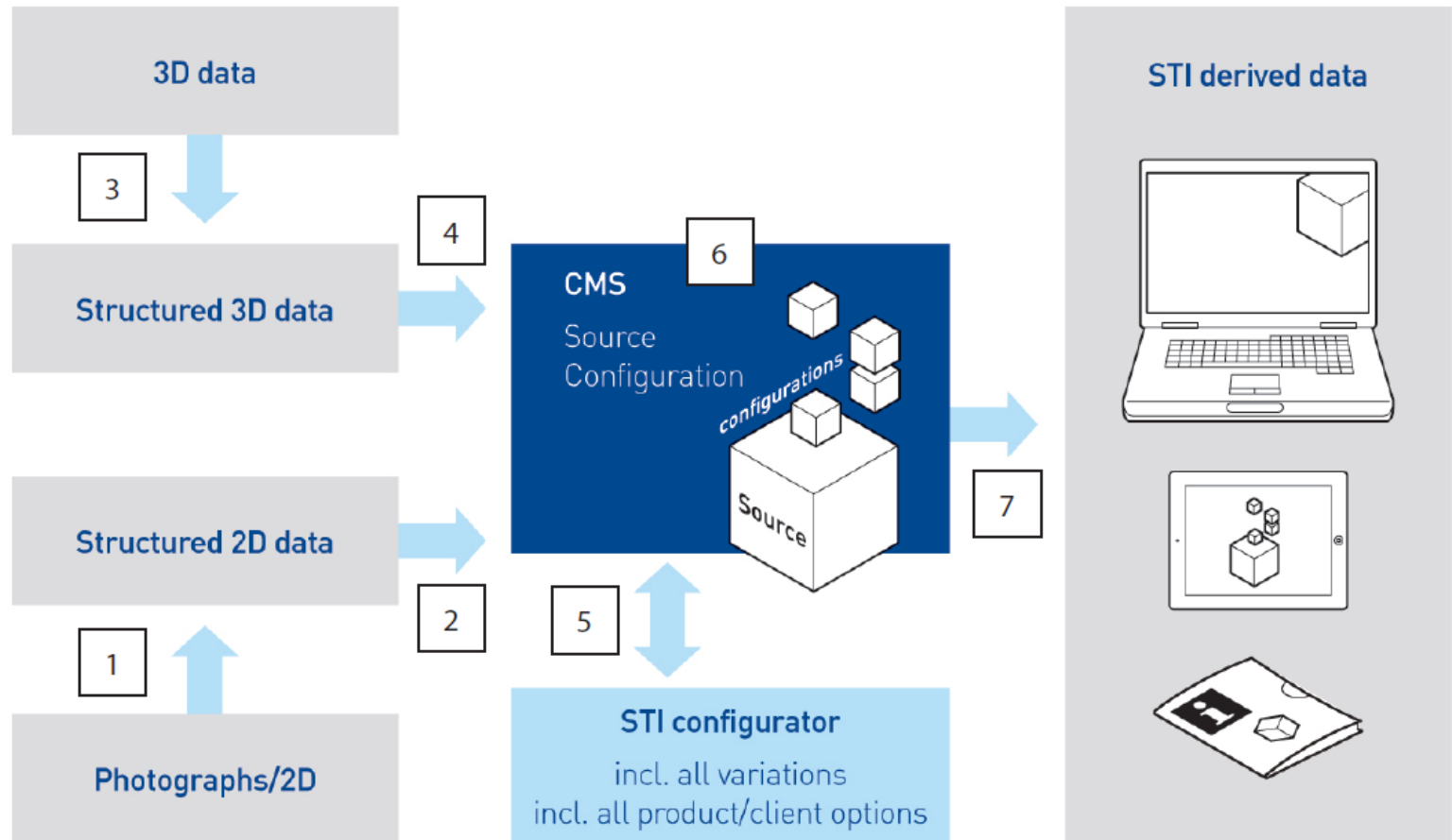


**After 2**



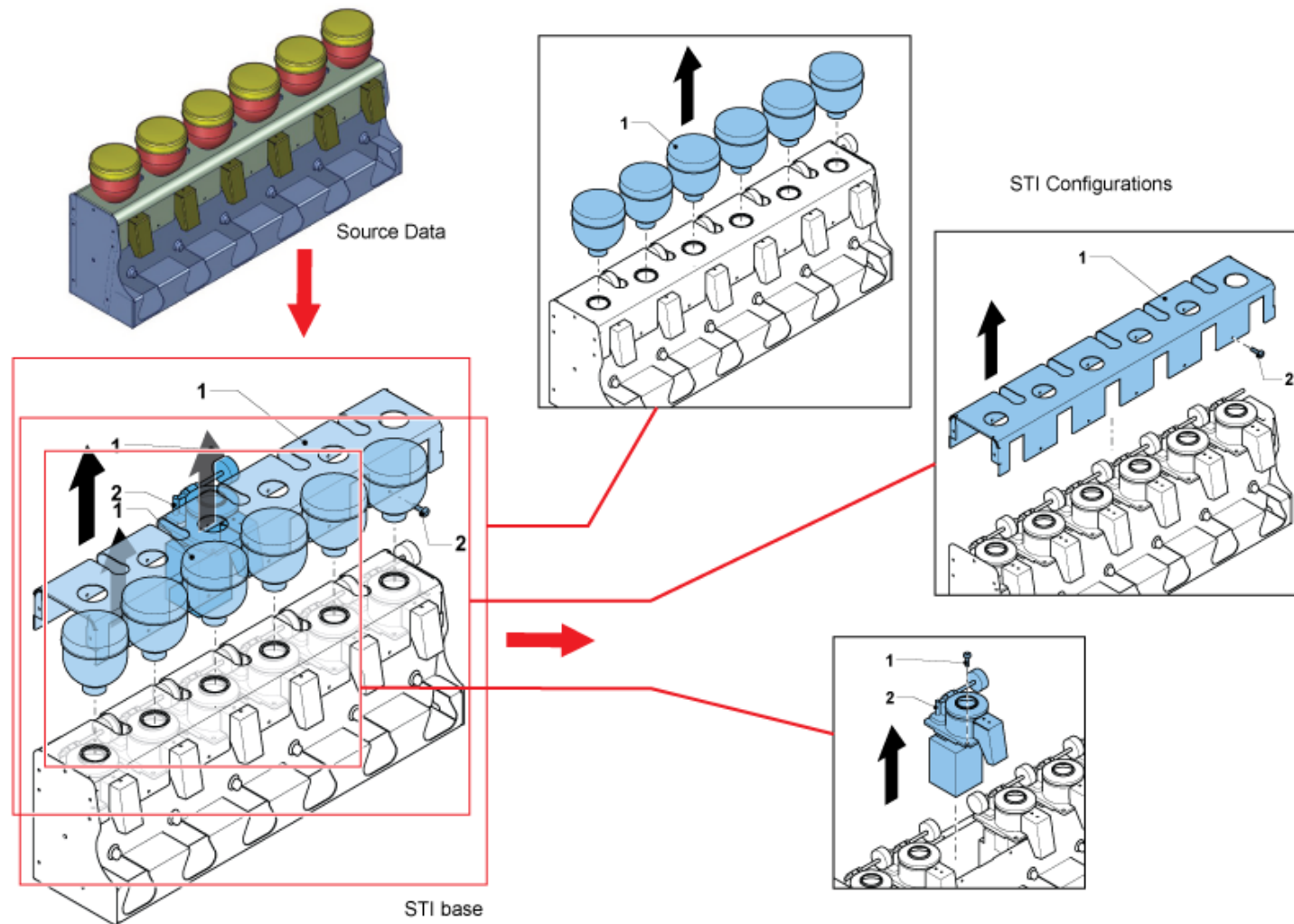
- After 1: shows the four colored parts that are referred to within the procedure.
- After 1: matches the end-user's view during the procedure of the task. This increases the recognition of the part within the system and therefore reduces the chance of mistakes.
- One should not have references inside a photo or illustration.
- Before 2 and After 2 demonstrate the possible effects when a PDF manual will be printed.

## The STI process





## STI in practice

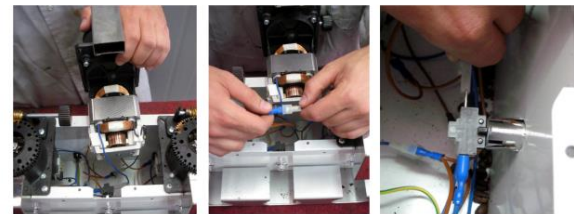


# Before

## (technician instructions six grinder 120619)

### Motor replacement

1. Remove the six hoppers by pulling them out of their bases. If there are beans inside the hopper, to prevent the beans from spilling, lay the Six-grinder on its front and pull the hopper downwards. Make sure that the stainless steel cover is closed. Note that these hoppers have no throttle on their bottom side.
2. Stand the Six-grinder back on its base. Use an electric screwdriver to release the screws attaching the top-cover to the base (three screws on the left and right sides and 5 screws on the front and rear).
3. Remove the top-cover by pulling it upwards.
4. **Use an electric screwdriver** to release the three screws that connect the motor to the body. Release only the screws in the marked holes.
5. Pull out the motor. Note that the wires of the motor are still connected to their plugs, so pull the motor carefully. Disconnect the two wires of the motor from their plugs and remove the motor.



## After

### (technician instructions six grinder 120619)

#### Motor replacement

##### A. Motor removal

1. To remove the 6 hoppers, pull them out of their bottom.

To make sure that the beans stay in the hoppers:

1.1 Close the stainless steel covers.

1.2 Put the Six-grinder on its front.

1.3 Pull the hoppers down.

**Note:** the hoppers do not have a throttle on their bottom side.

2. To remove the top-cover from the bottom:

2.1 Put the Six-grinder on its bottom.

2.2 Release the 3 screws on the left and right sides.

2.3 Release the 5 screws on the front and rear sides.

2.4 Pull the top-cover up.

3. Release the 3 screws that connect the motor to the frame.

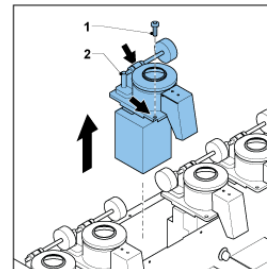
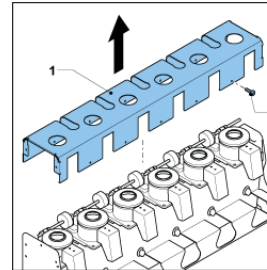
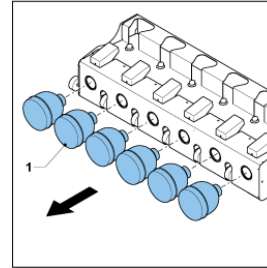
The illustration shows the screws that you must release.

4. Pull out the motor.

**Caution:** pull the motor carefully, to prevent damage to the motor wires.

4.1 Disconnect the 2 wires of the motor from their plugs.

4.2 Remove the motor.



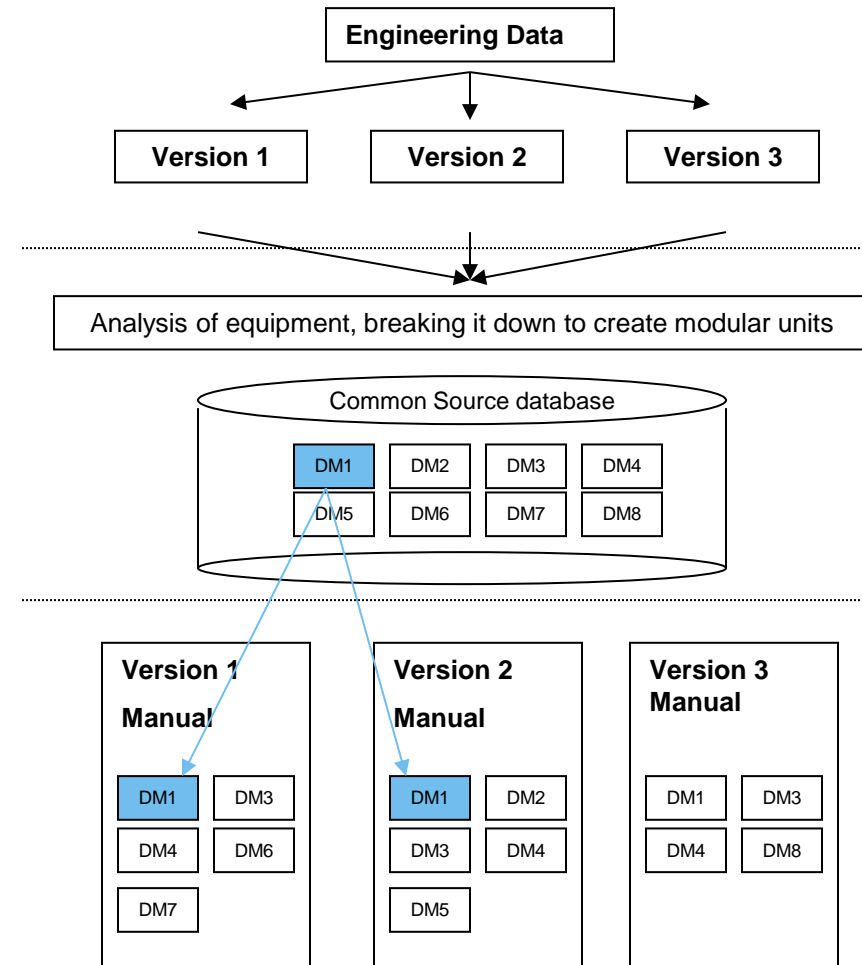
## Results:

- Clearer & shorter instructions , improved readability, one instruction per sentence
- 8% reduction in words, although the procedure is more detailed
- Cheaper, better and faster translations

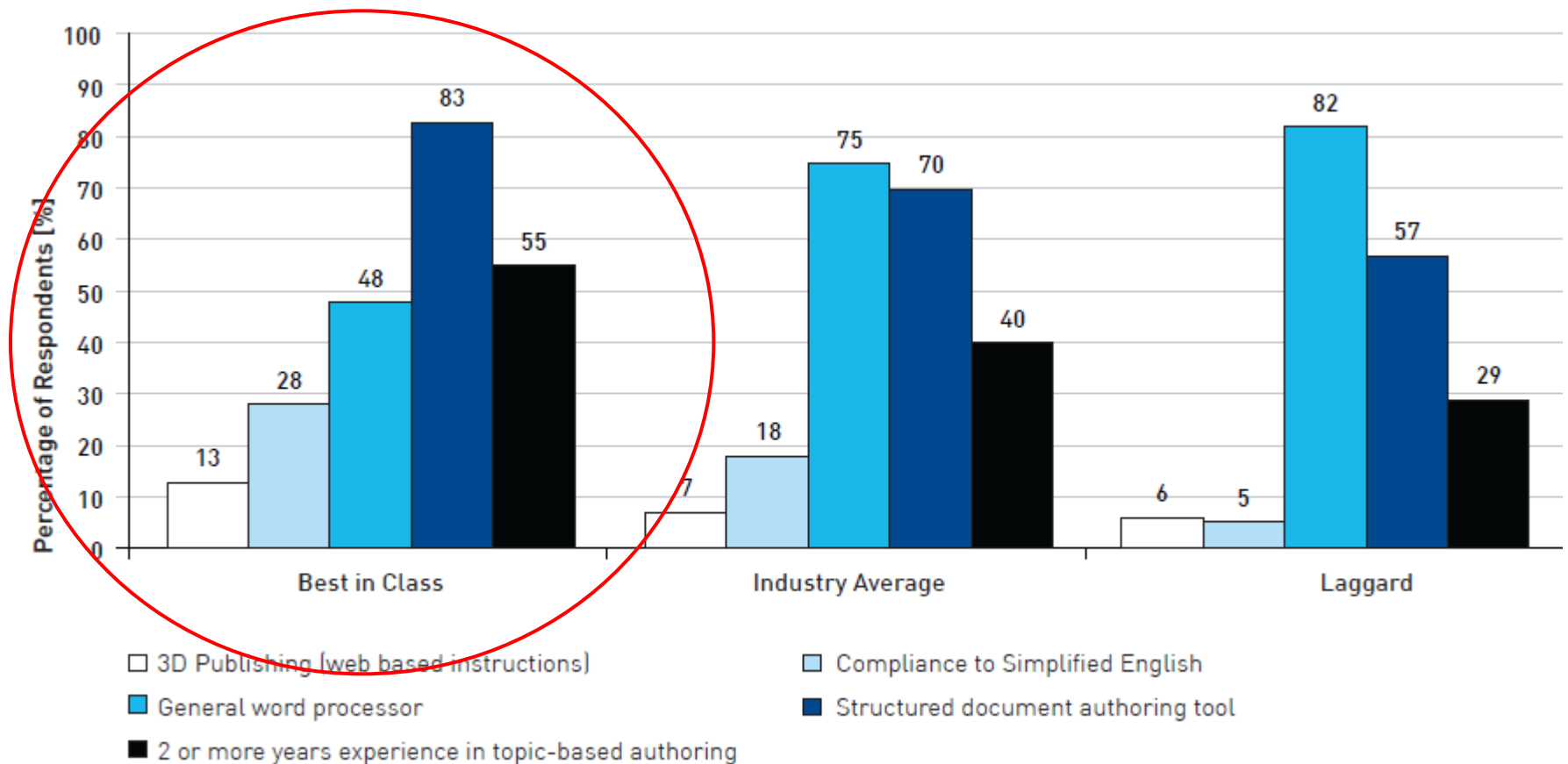
# Structure

# The Tedopres Model

- Writing process (reuse data)
  - Much faster
  - More consensus between manuals
  - S1000D



## The Tedopres Model - benchmarked





## Benefits

- Save 70% in illustration work!
- Save up to 40% on documentation (translations) and time to market
- Create quality content once and reuse
- Improve customer experience
- Reduce time to market
- Reduce liability and product damage
- Reduce time for maintenance
- Improve product lifecycle

## Marketing & Sales



## Preparation & Installation



## Training



## Operation



## After-Sales Service

## Maintenance, Repair and Overhaul



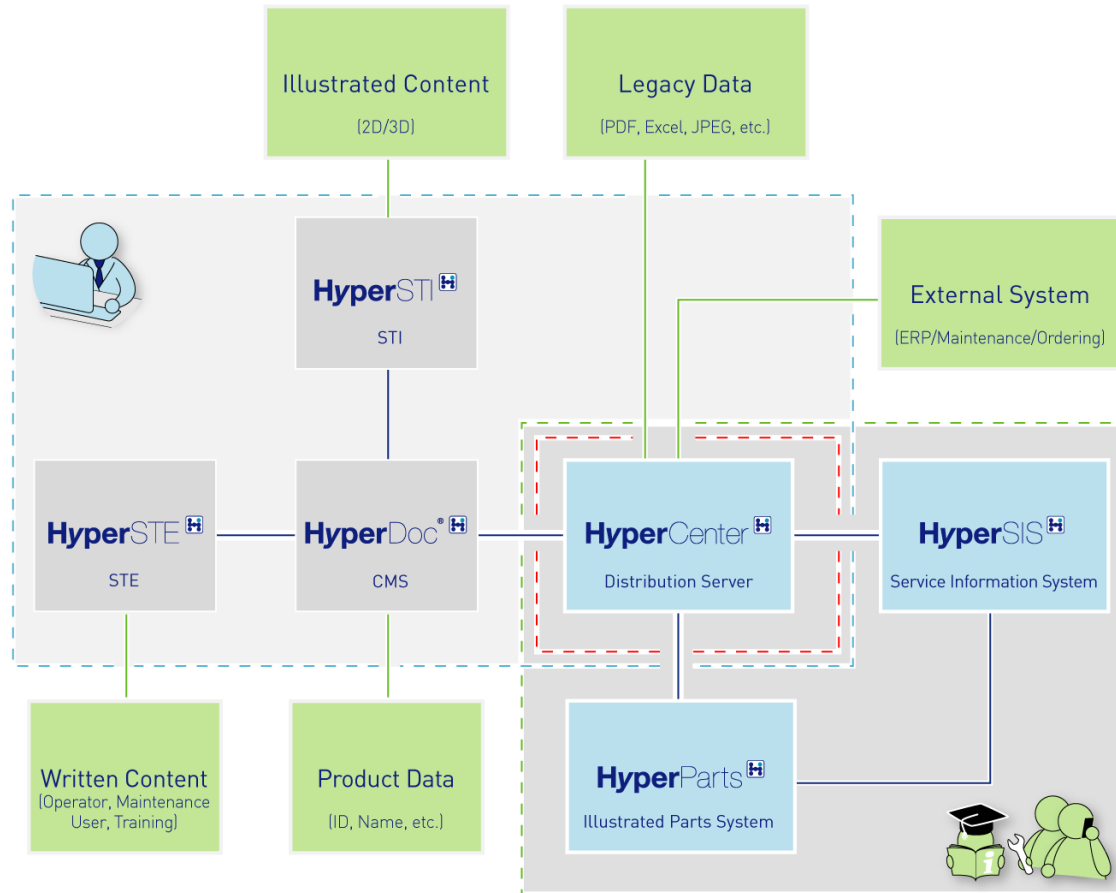
## Parts ordering



## Feedback



# The Technical Information Framework



## So where to go from here?

- Ask us to do a Proof of Concept
- Free Content Reality Check!

## Contact us today!

- [sales@tedopres.com](mailto:sales@tedopres.com)
- [SimplifiedEnglish.com](http://SimplifiedEnglish.com)
- [Tedopres.com](http://Tedopres.com)
- [Etteplan.com](http://Etteplan.com)

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