Simplified Technical English

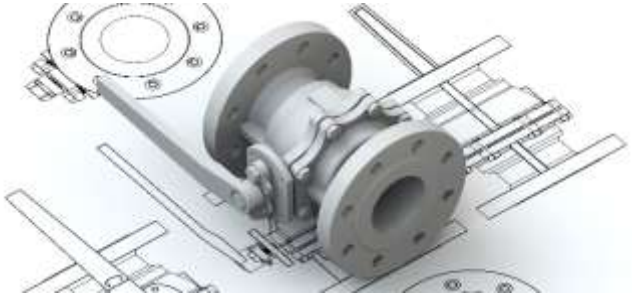
As part of an S1000D implementation, and the impact on Augmented Reality and IoT strategies

Etteplan

Etteplan

- Specialist in engineering, embedded systems, IoT and technical documentation; established in 1983
- 2500+ employees, 500 of which are documentation specialists
- Global operations in Finland, Sweden, Netherlands, Germany, Poland, USA and China
- ISO 9001, ISO 14000, and ISO 13485 certified
- Shares in NASDAQ OMX Helsinki Ltd. (ETT1V)
- Revenue in 2016: €183.9 million

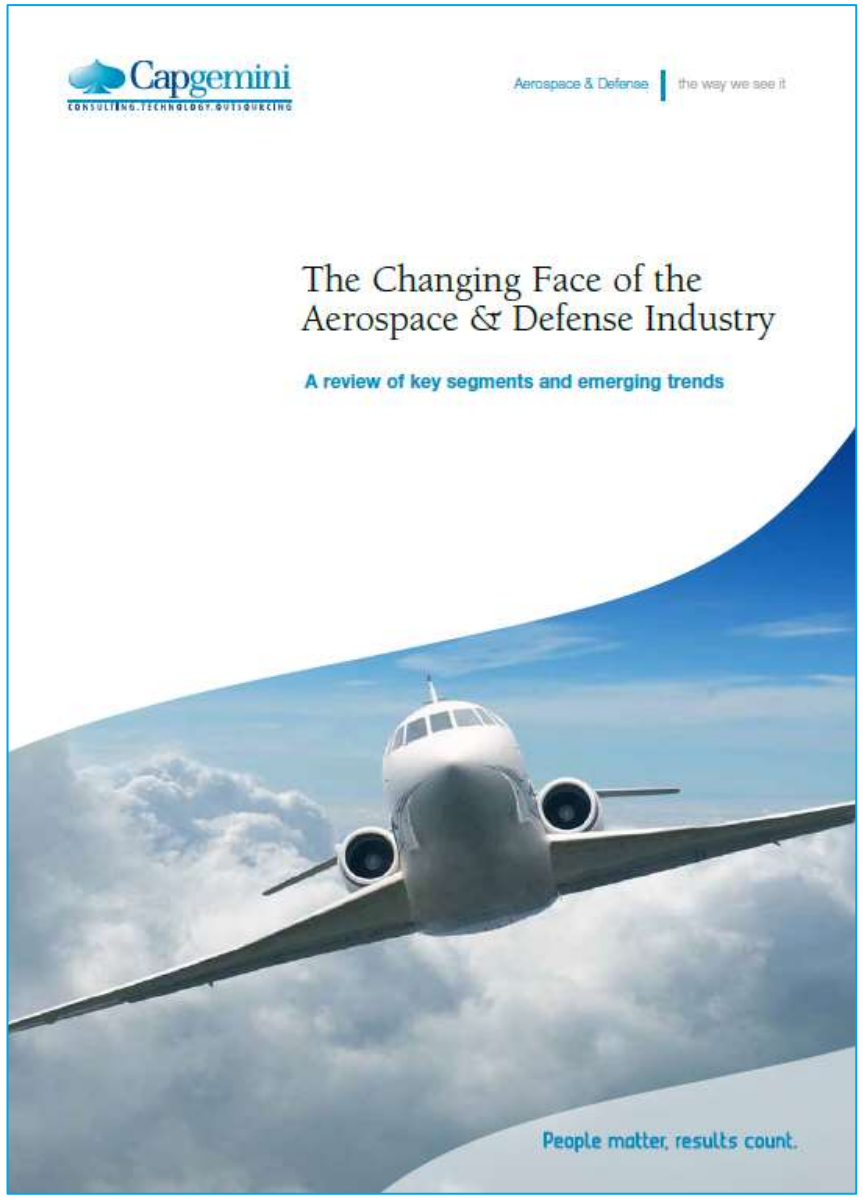
Etteplan: Engineering with a Difference



Engineering services to support our customer's product development and machine manufacturing.

Technical publication services and software to increase the efficiency of the service business of equipment manufacturers. S1000D, S2000M, ASD-STE100 expertise.

Embedded systems and IoT (Internet of Things) services to bring intelligence to machines and equipment to enable networking and integration.



"Reduce costs without conceding quality:
In most A&D companies cost-reduction programs have been running for a number of years. Yet there are still opportunities for additional reduction via approaches such as Business Process Outsourcing of some business functions like Technical Publications."

The need for clarity and engaging content

- Information is becoming more complex and bulky
- New markets and geographically dispersed service centers
- Increasing number of non-native speakers and inexperienced personnel with varied levels of technical skills

- Risks of misunderstandings
- Liability for faulty or incomplete information
- Shorter response times
- Shorten downtime
- Mergers and acquisitions

International Civil Aviation Association (ICAO)

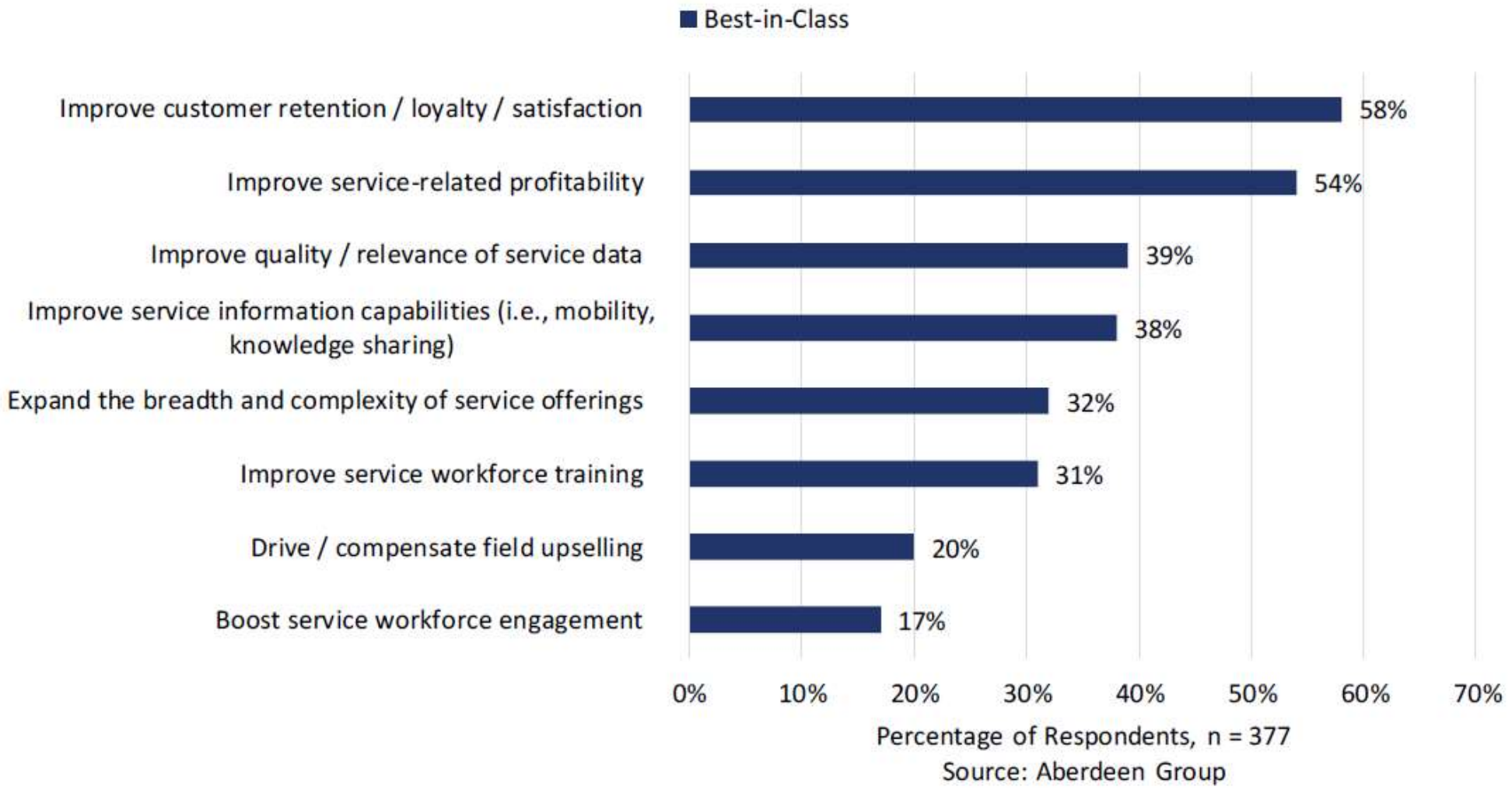
“Standardization of language used by maintenance personnel has become increasingly necessary because of substantial changes in maintenance practices in the past 20 years, including:

- Expansion of the role of computers in the maintenance environment;
- Fewer translations of documents from English to a native language;
- Increased use of manufacturer-generated standardized training material (in English);
- More alliances among airlines, many of which are in countries that have no common language; and
- An increasingly mobile, multicultural work force”

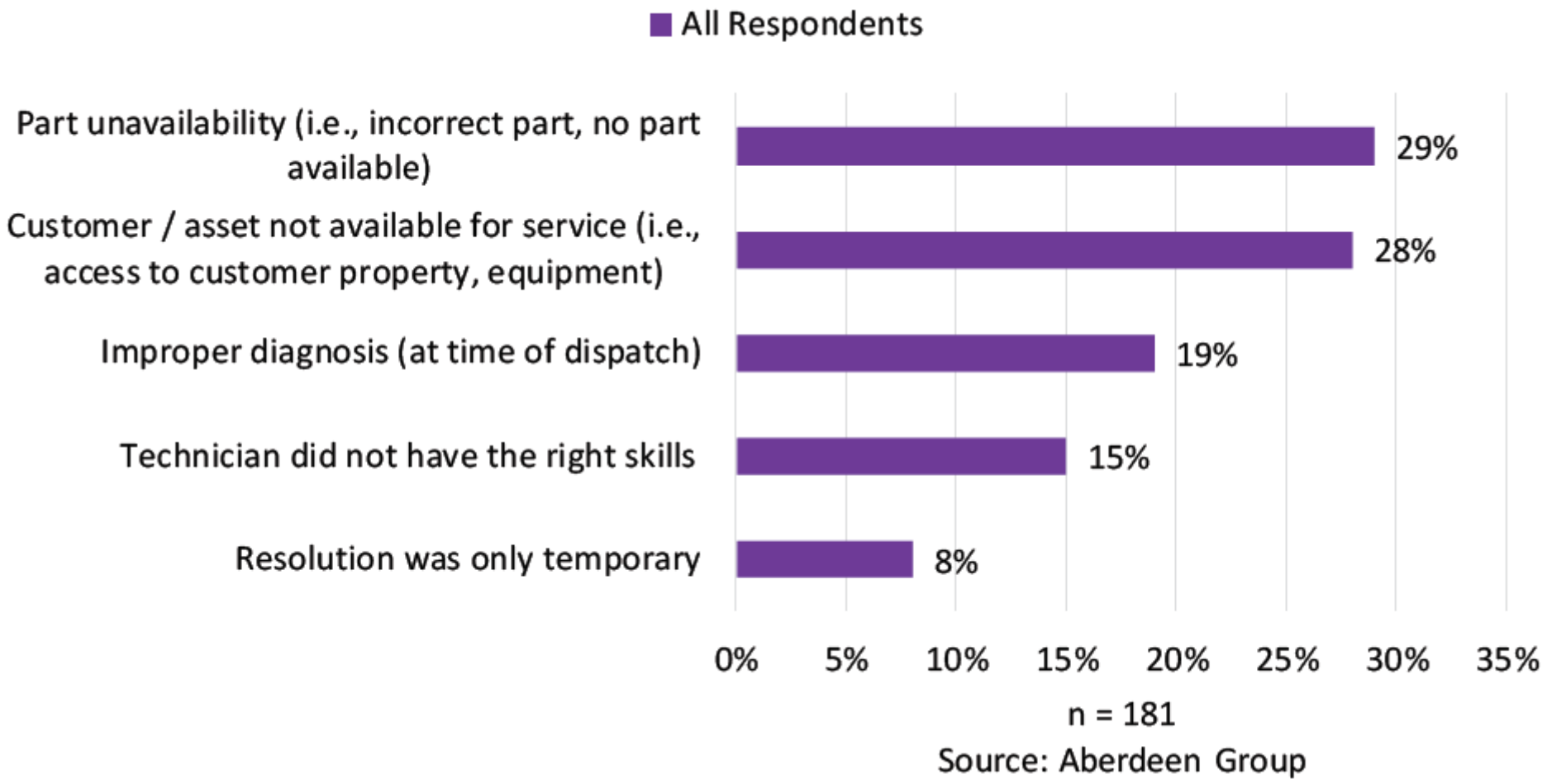
How the worst maintenance fails could have been prevented

- 2009: a Bond Super Puma AS332L Mark II helicopter crashed in the North Sea, killing 14 oil workers as well as two pilots. 2014: The report blamed the mechanical problems on failed maintenance.
- 1985: Japan Airlines Flight 123 took off without a vertical stabilizer and crashed 32 minutes later.
- 2005: Chalk's Flight 101 crashed shortly after takeoff, killing everyone on board. The cause was traced back to metal fatigue—and a crack in the plane's wing that was discovered but never properly fixed.
- 2000: Alaska Airlines Flight 261 nose-dived into the Pacific Ocean during a flight from Mexico to Seattle. Everyone aboard the McDonnell Douglas MD-83 was killed, and investigators later determined the cause to be insufficient lubrication of a jackscrew assembly by airline employees during preventive maintenance.
- 1988: A huge section of Aloha Airlines Flight 243's fuselage blew off in 1988. As a result, the National Transportation Safety Board tightened its maintenance requirements. The 19 year old plane had succumbed to corrosion and widespread fatigue. It may have been prevented if strict inspection and maintenance procedures for high-use aircraft had been in place.
- Source: Aviation Institute of Maintenance

Top Goals for Service in 2016



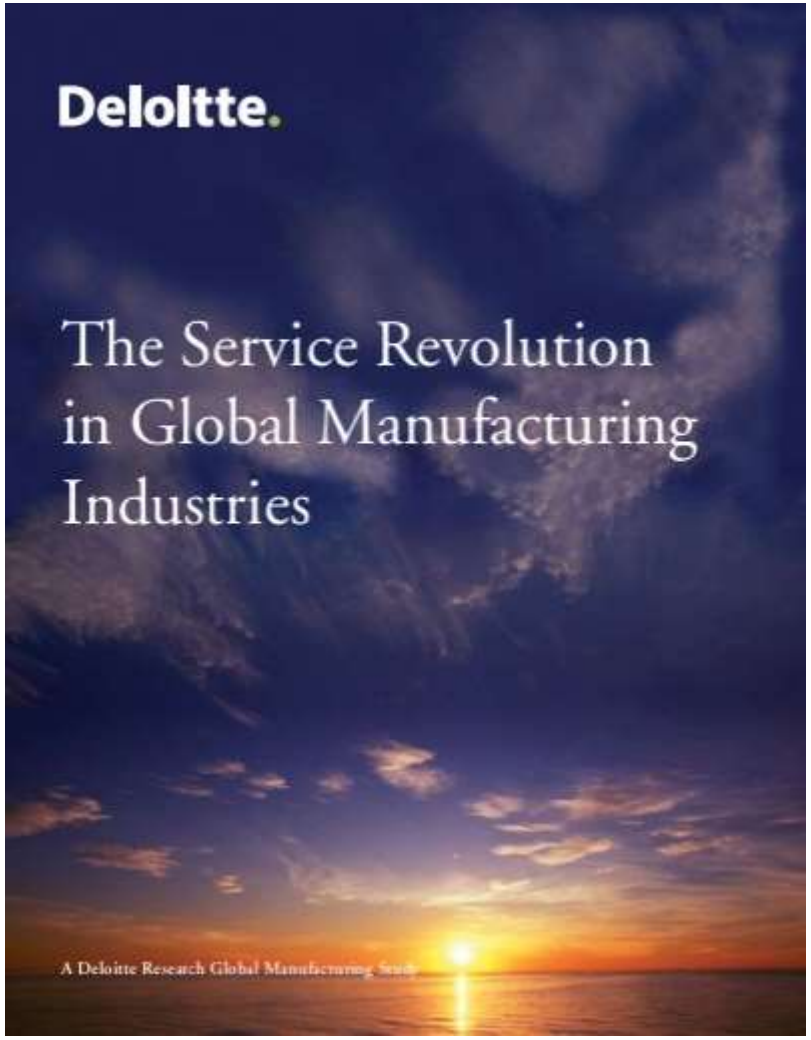
Causes for ineffective Service



Inefficiencies in the service business

25%-50% of a field service engineer's time is used in finding and understanding maintenance tasks.
Deloitte, "The Service Revolution in Global Manufacturing Industries"

40% of failed service visits of a capital goods manufacturer's service network were caused by lack of information.
O. Lehtonen, T. Ala-Risku and J. Holmström, "Enhancing field-service delivery: the role of information"



Do you have an ASD-STE100 Requirement?

2 General writing rules

2.1 Language

The project or the organization must specify the language in which the data modules are written. If that language is English, then it is recommended to use the writing rules and vocabulary in ASD Simplified Technical English, ASD-STE100® (formerly known as AECMA Simplified English, AECMA Document No. PSC-85-16598).

Business rule decision point BRDP-S1-00020 - Specify the language:

– Decide which language to use for producing data modules.

Business rule decision point BRDP-S1-00021 - Use of ASD Simplified Technical English:

– Decide whether to use ASD-STE100® when producing data modules in English.

A standard dictionary must also be designated by the project or the organization. If the maintenance data for the data modules is required in the English language, it is recommended that the Merriam-Webster's Dictionary be used as the standard.

Applicable to: All

S1000D-A-03-09-0100-00A-040A-A

Chap 3.9.1

ATA iSpec 2200

- Information standards for aviation maintenance
- Recommended specs for content, structure and deliverables to meet communication requirements of aircraft technical information
- Objective is to:
  - Minimize cost and effort expended by operators and OEMs
  - Improve information quality and timeliness
  - Ensure that manufacturers provide data that meets the airline operational needs

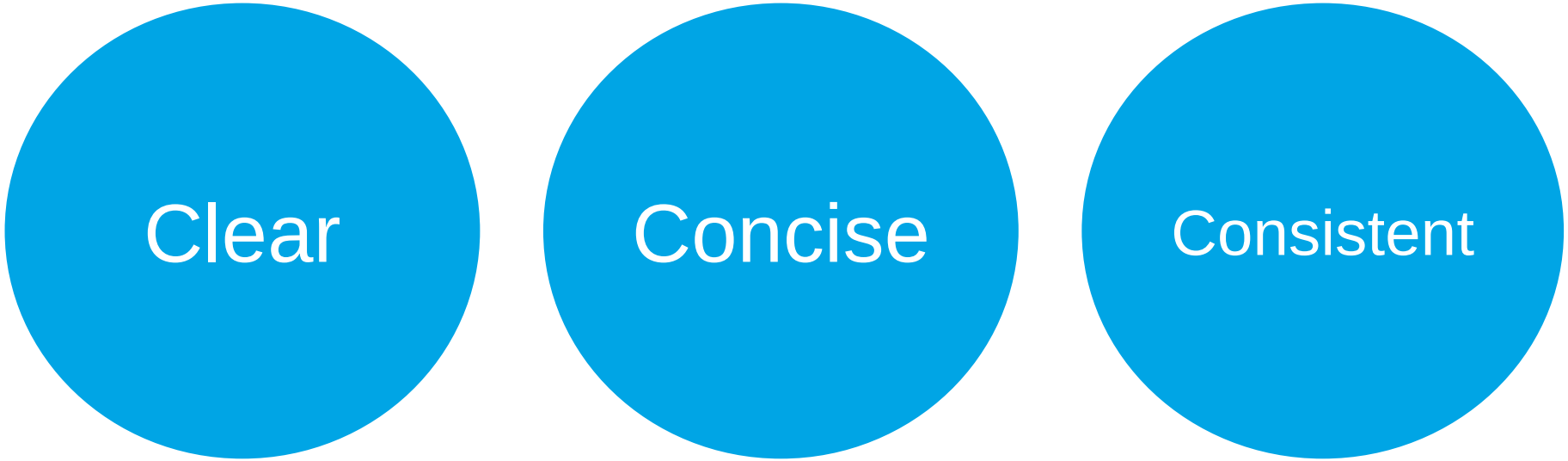
What this may mean to you

- Inability to deliver the required technical documentation
- Preference given to your competitors
- Not qualifying for tender opportunities
- Losing supplier status

With compliant data delivery you can:

- Further optimize the delivery of technical documentation
- Maintain compliance as a Supplier
- Access new industries
- Be first to market

Make content



Simplified Technical English

- Official Specification, ASD-STE100
- Issue 7 (January 2017)
- STE makes technical English easy to understand
  - **Writing rules**
  - Keep it simple, be specific, be consistent
  - **Standardizing terms**
    - One word = one meaning
    - Core dictionary (3000) plus company dictionary

Steps for implementation

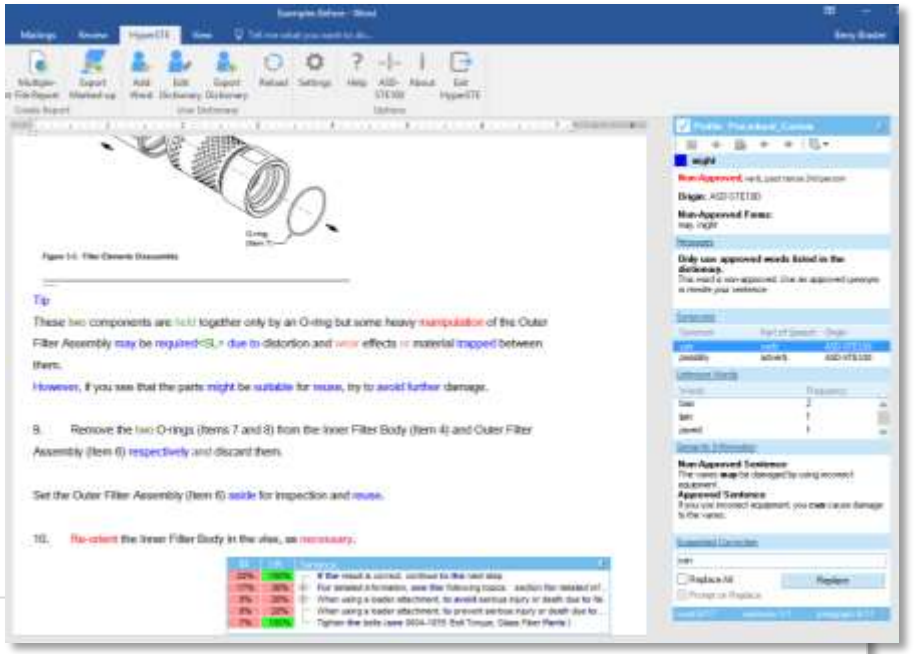
1. Train your writers on the writing rules (2 days)
2. Standardize your terminology (one word = one meaning)
3. Compliance check with HyperSTE

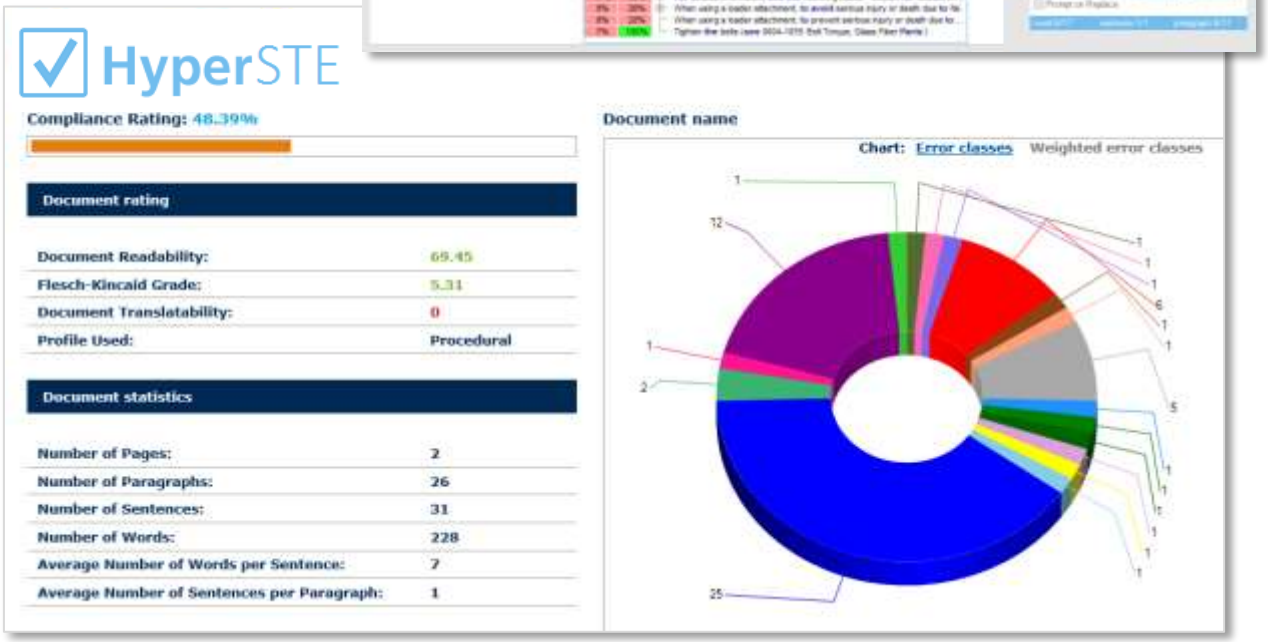
HyperSTE

- HyperSTE Content Checker (plugin, Desktop)
- HyperSTE Terminology Manager
- HyperSTE Sentence Manager

- Interactive feedback
- Reports / batch checking

- Based on ASD-STE100 but adaptable to other authoring standards






BAE SYSTEMS
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MBDA
SAAB
ASML
ANDRITZ
FOKKER
LOCKHEED MARTIN
Gulfstream
Westinghouse
NXP
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L3
AIRFRANCE KLM CARGO
INSITU
Patria
VOLVO
Schneider Electric
NAVSEA
australian aerospace
GENERAL ATOMICS
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Vestas
CROWN
Rolls-Royce
COBHAM
THALES
CARGOTEC
NEXTROM
Electrolux
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ST Electronics
IHC
SELEX
eurocopter
orbotech
TELDIX
Honeywell
MITSUBISHI AIRCRAFT CORPORATION
Atlas Copco
ABB
Fortum
Husqvarna Group
ELEKTA
AmericanAirlines
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YANMAR marine
outokumpu
SIEMENS
FMV
stryker
nokian TYRES
RADIOMETER
remeha
BOON EDAM
Ingersoll Rand
Inspiring Progress
中国商飞 COMAC
BOMBARDIER
YAMAHA
RUUKKI
KONE

Short is not always good

- Turn off engines not required

means…

- Turn off the engines that are not required, or
- Turning off the engines is not required

Make people responsible for their actions

- A woman hits a man using a hammer

The bigger the product, the longer the sentence

- Clean the turret dome chassis thermal window securing screw threaded holes and the thermal window 16 securing screws of all previously used sealant using solvent.
- Clean the turret dome chassis thermal window securing screw threaded holes and the thermal window 16 securing screws of all previously used sealant using solvent.
- Clean the 16 screws and the threaded holes of all sealant with solvent.
- 48% reduction!

Benefits

- Comply with ASD-STE100
- Quality assurance and improvement
- Standardized way of writing (Simplified Technical English, Corporate Style Guide, Grade Level)
- Improved safety
- Efficient authoring
- Reduced time to market
- Improved customer experience
- Facilitates content management, XML
- Facilitates S1000D and ATA iSpec 2200
- Considerable cost savings
- Cheaper, faster and better translations

Survey Results

A recent survey amongst HyperSTE users showed that the use of HyperSTE resulted in the following benefits:

- Up to 30% in cost savings on translation and localization
- Up to 40% in reduced word count
- Quality improvement in writing and translations
- Up to 30% in reduced product cycle time
- Up to 40% reduction in overall documentation cost
- Efficient conversion of legacy documents

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.

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.

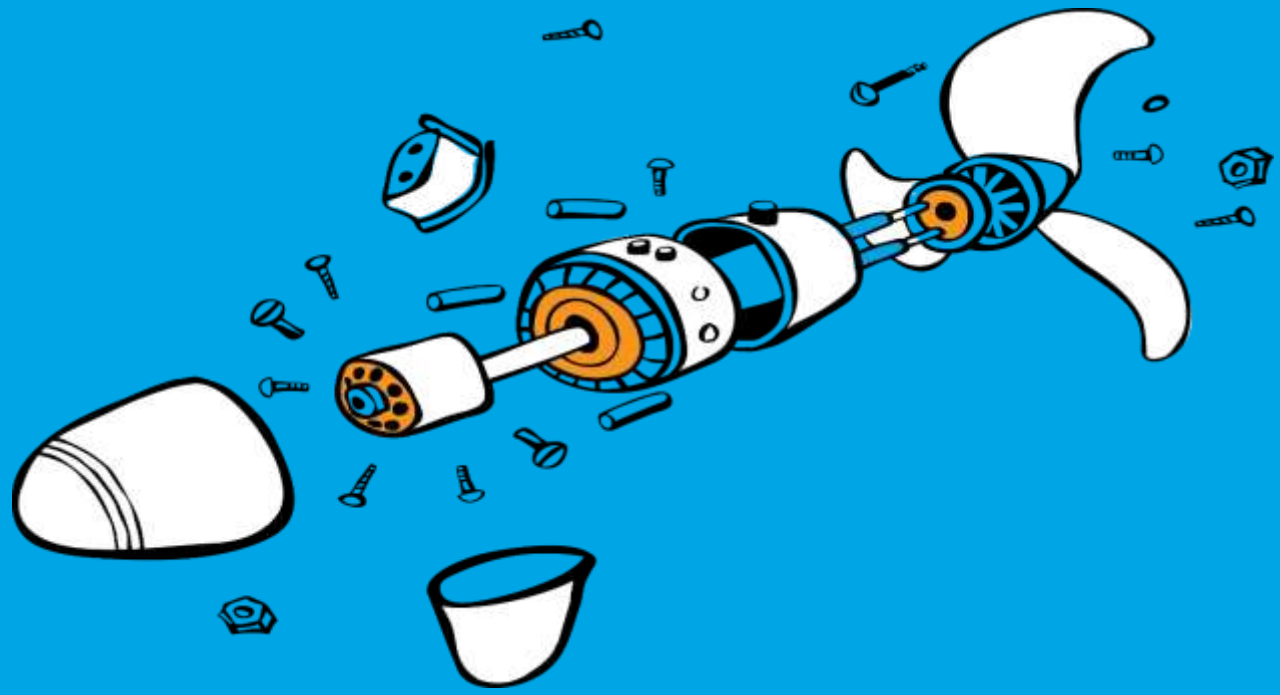
Rolls-Royce

Case Study – Air France | KLM

- Clarity in Safety Management Manual (SMM)
- Clear communication through Call Centers
- Standardized communication where English is not the mother tongue of content authors

- Standardized on terminology
- Trained authors
- HyperSTE

STE and IoT, Augmented Reality



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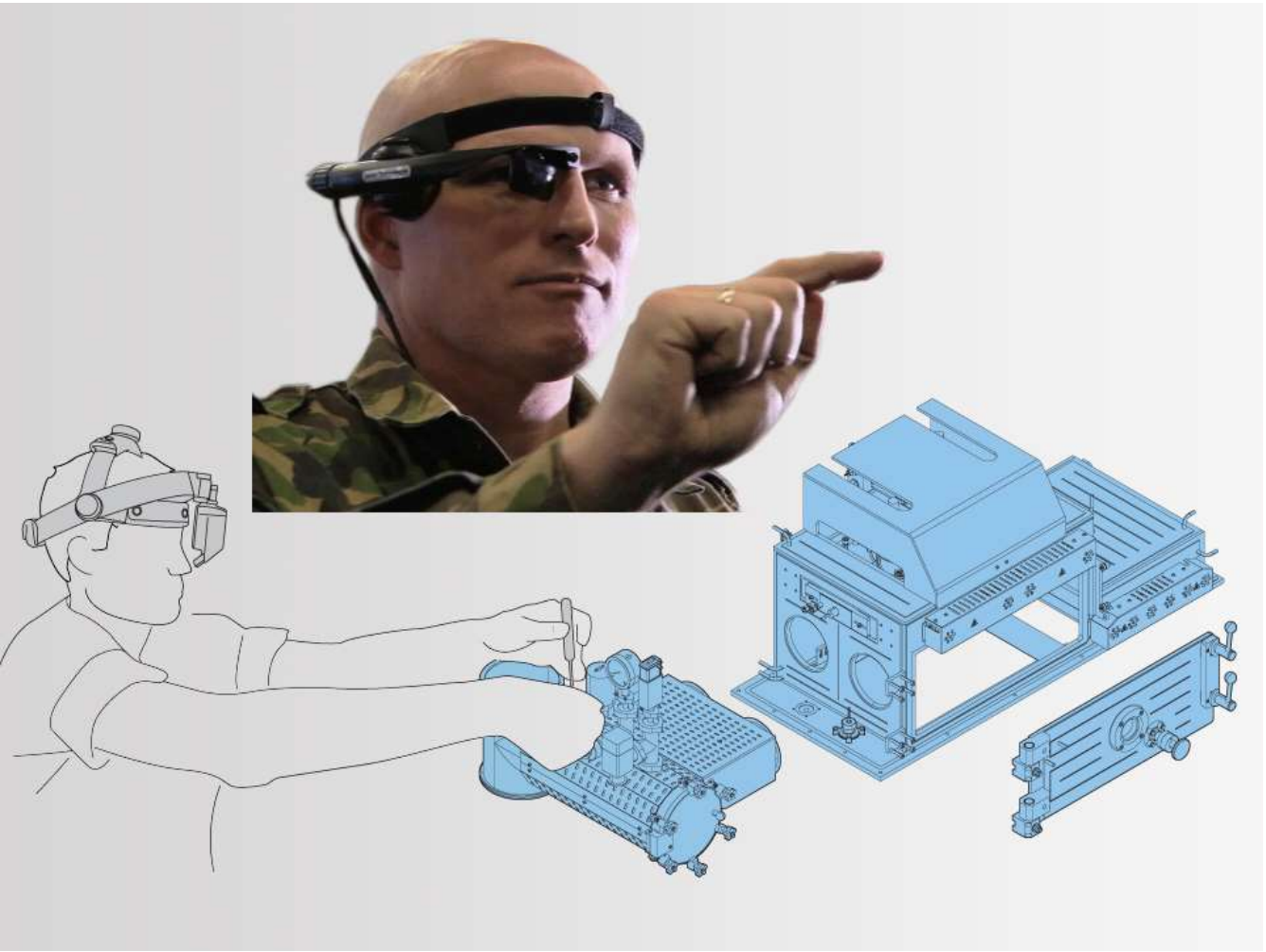
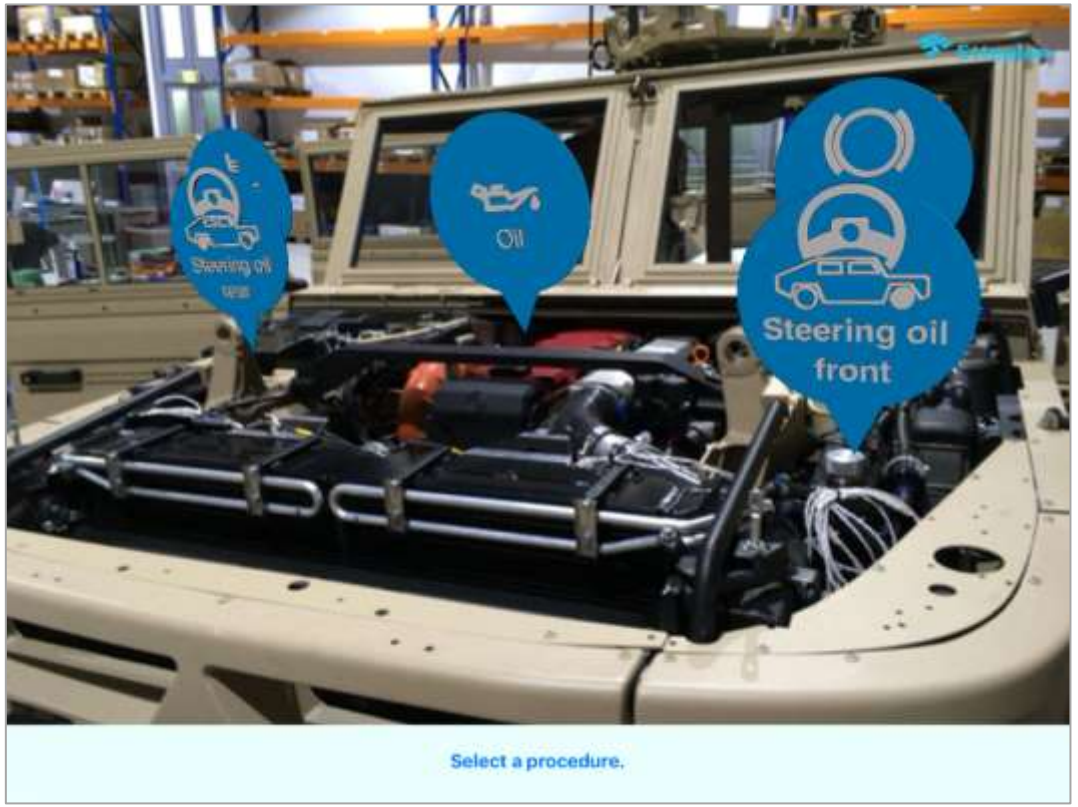
What’s changing?

- The way people consume information (the end user will want to bring the home experience to work)
- The way information is delivered (AR, VR, interactive)
- The type of information (installation, use, service)
- The devices themselves (mobile devices, glasses)

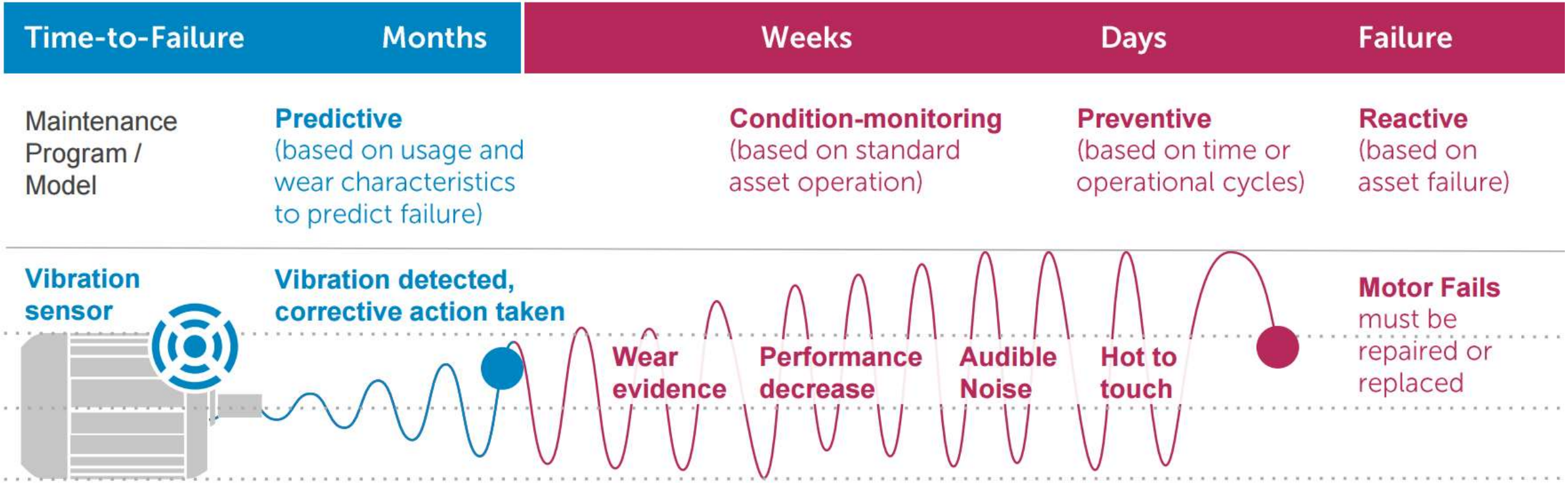
Augmented, Virtual Reality



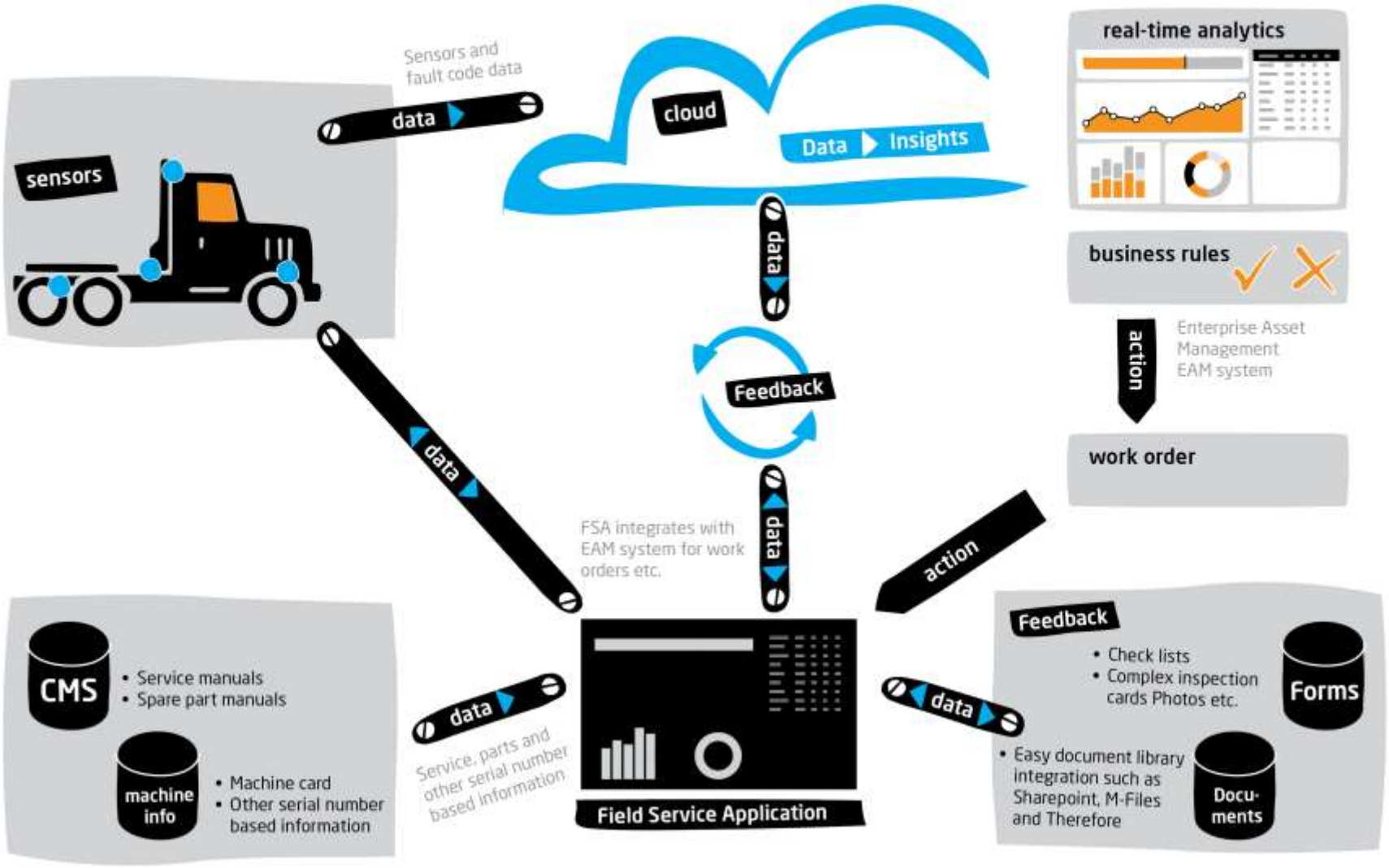


“Users are looking to bring their home experience to work.” Head of Service, Airbus

IoT and Tech Pubs: from reactive to predictive maintenance

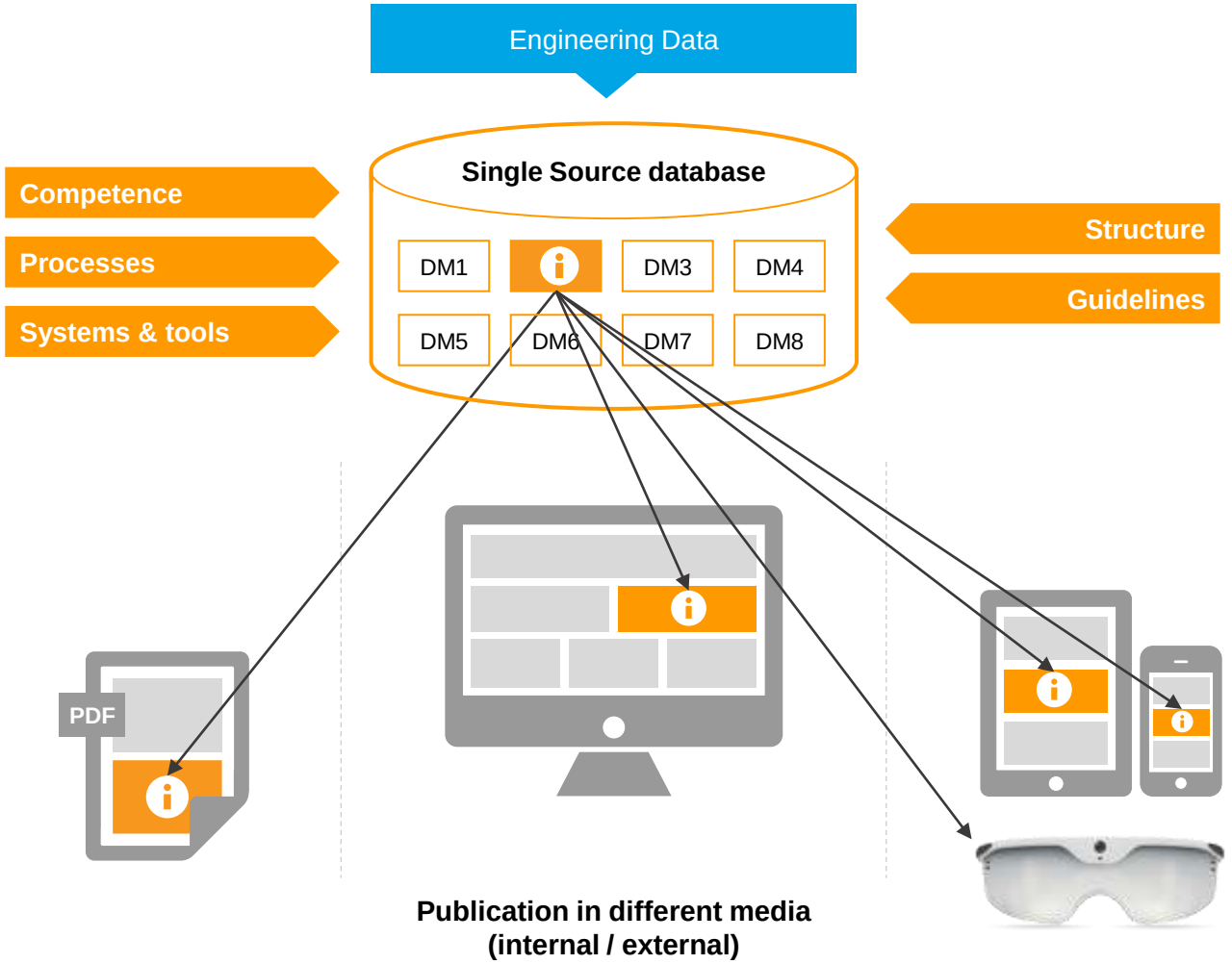


Where the future is heading



Etteplan’s Tech Pub Model

1. XML (S1000D) for structure
    1. Reuse (single sourcing)
    2. Easier to manage
    3. Faster to find information
    4. Multiple publication formats
    5. Data exchange
2. Simplified Technical English (ASD-STE100) for authoring
3. Simplified Technical Illustrations for structure and simplification of illustrations – from 3D to reusable CGMs
4. Experienced documentation specialists

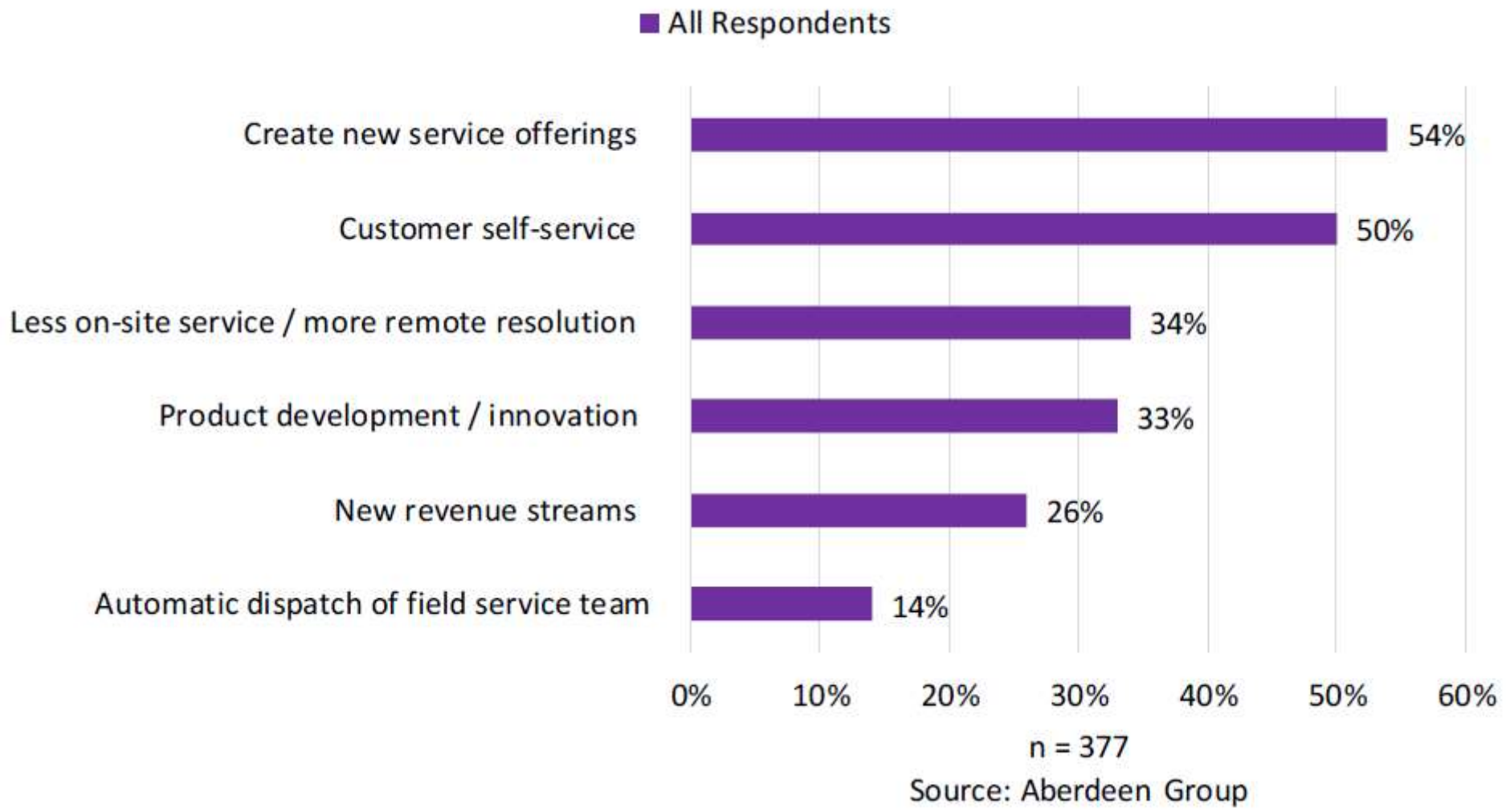


HyperSIS IETM

To improve the profitability of the maintenance business by reducing or preventing downtime, by providing the end user with the right information, whenever and wherever needed:

- Minimized time to find and troubleshoot issues
- Engaging content on mobile devices
- Quick and easy access to all product information in one place
- Easy spare parts ordering
- Feedback function to help keep content up-to-date
- Connect to Augmented Reality, IoT
- Cost efficiency in creation, management and delivery

Opportunities



Request our free booklet

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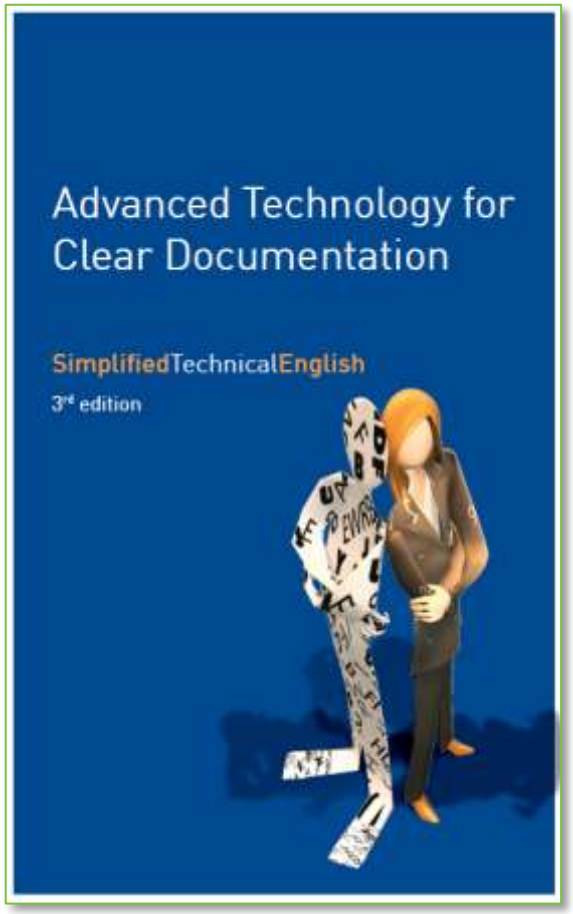

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