

# MODEL-BASED SYSTEM ENGINEERING **DRAWING INSTEAD OF WRITING**



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**The Model-Based System Engineering (MBSE) focuses on creating and exploiting drawings as the primary means for exchanging information between engineers, rather than being based on documents, explains Patricia Bomme, head of Safety and Compliance within the technical department of skyguide. This method strives to look at the source authority model instead of looking at a package of disassociated and disconnected sets of documentation.**

## SKYGUIDE **What is the Model-Based System Engineering all about?**

**PATRICIA BOMME** Drawings are among the most powerful communicative and conceptual tools. Psychological experiments show that drawing to encode information surpasses other strategies, such as writing, mentally visualizing, or viewing photos. In MBSE, models are simplified representations of the reality from which unnecessary parts have been removed. They use modelling languages like Archimate (in architecture), BPMN (Business Process Model and Notation, a graphical representation of business processes) or UML (Unified Modelling Language, used in software engineering to provide a standard way of visualising the design of a system). Commonly, MBSE is using central repository-based modelling tools.

## **What do you intend to achieve with the introduction of MBSE?**

**PB** You have to put MBSE in the context of our Virtual Centre (VC) which is introducing new technologies for applications such as Service-Oriented Architecture, DevOps, Scaled Agile Framework, a layered infrastructure and an intensified role for suppliers. Thus, VC is increasing the complexity of our technical

solution delivery and operations. To handle this complexity, new technical competencies and new collaborative working models are required.

## **This demands a new company culture, doesn't it?**

**PB** Yes, shifting to a new collaborative model is tightly linked with the company culture. The collaborative working model is more challenging and requires a new mindset. In the past, engineers were able to deal with hardware and software issues occurring on their own equipment for which they possessed the necessary knowledge and information. The information was then neatly documented and sustained by the users for their usage and for compliance purposes. However, this will no longer be the case in the future.

## **What are the key factors to achieve a successful implementation?**

**PB** We need to prove early on that MBSE effectively works by improving stakeholder communication and identifying problems, facilitating buy-in, simplifying information and standardizing the support of knowledge management, visualising the whole system dealing with complexity and reusing architecture to maximize cost savings. One of the success factors is the ability to share information and to communicate unequivocally with interested parties. Information must have a single source of truth and be validated by all concerned; it has to be available and accessible.