

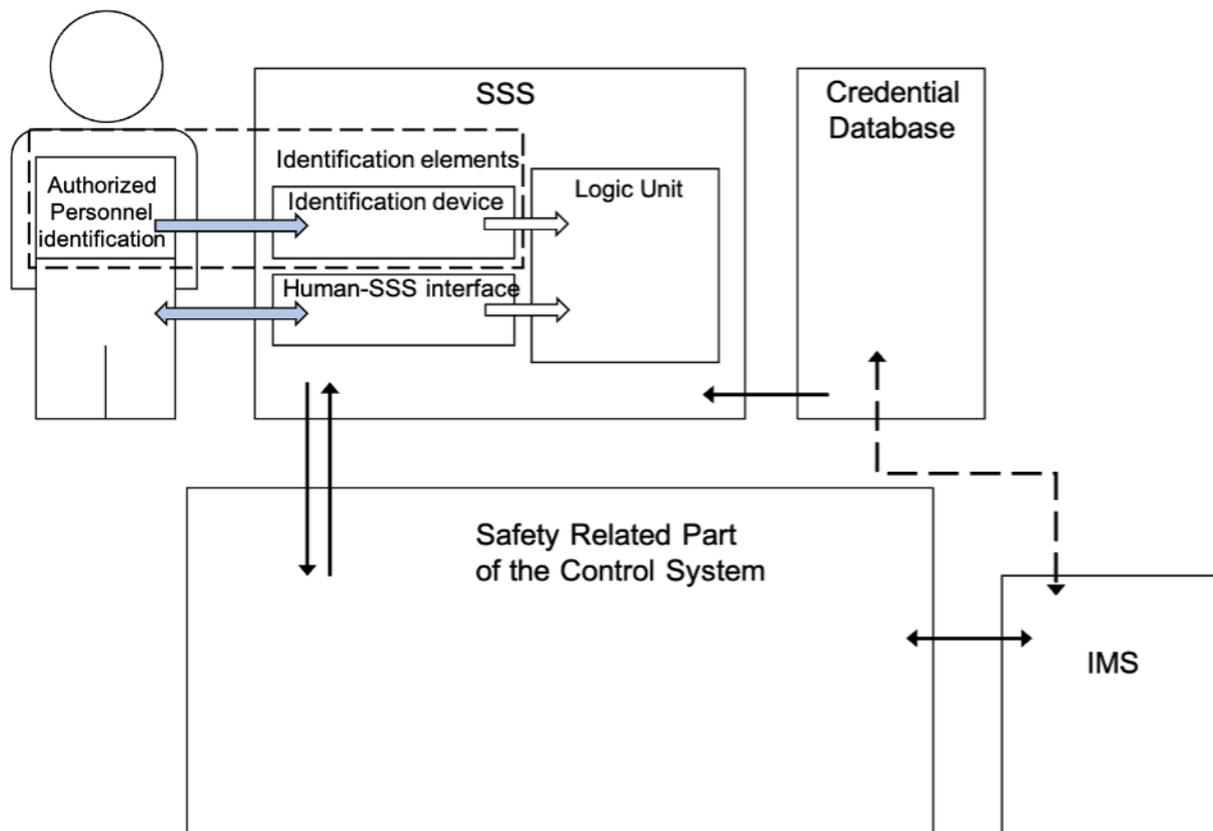
ISO/TR 22053 (2021) Safety of machinery — Safeguarding supportive system

ISO/TR 22053 Safety of Machinery – Safeguarding supportive system (SSS) was published in February 2021 with little to no fanfare. It is a Technical Report rather than a Standard or Technical Specification. Technical reports tend to focus on data from an informative report, or information of the perceived “state of the art”. This TR has been created to work alongside ISO11161 – Safety of Machinery – Integrated Manufacturing Systems.

Is a safeguarding supportive system (SSS) machinery safety or security? That is an interesting question because the primary focus is authenticating and authorising personnel to be able to use certain safety functions. The safety devices and functions will always work regardless of whether the safeguarding supportive system is utilised or not.

So why is there a need for a safeguarding supportive system? ISO/TR 22052 addresses the need to both control access to safeguarded spaces and ensure the appropriately credentialed individual carries out the tasks they are authorised to. In layman’s terms it is all about ensuring the right person carries out the right tasks, or to put it as a question – Do you want machine operators able to carry out tasks they have not been trained for?

A safeguarding supportive system is defined as a complementary risk reduction / protective measure to enable mode selection by the use of authentication means.



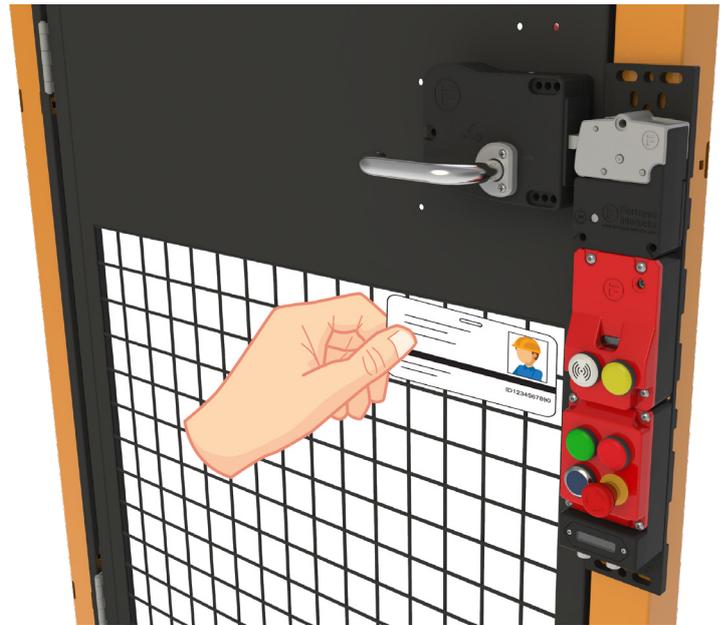
Safeguarding Supporting System - Concept

The SSS identifies personnel authorised to carry out tasks and enables the mode selection based upon the authorization. It may, for example, enable safety functions such as reset or release of guard locking by interfacing with the safety related part of the control system. In this case the personnel presenting their identification would be able to select a reset function or request entry to the safeguarded space if the system recognises their authorisation.

Authorised personnel identification may be as simple as a key or personal RFID tag or it may be a biometric property such as a retina or fingerprint scan. The important point is that the SSS can recognise an input and validate it, ensuring the authorised person is only able to perform tasks according to their skills or authorisation level.

The SSS can be used to control access to the safeguarded space as well as controlling the ability to carry out tasks within the safeguarded space. Tasks to be controlled may include adjusting, set-up, teaching and troubleshooting based upon the modes of operation of the integrated manufacturing system.

Whilst ISO/TR22053 is primarily for use in designing systems to support the safety functions associated with the IMS it is also useful in protecting the machinery processes by preventing unauthorised stops and start-ups. At first glance it may be perceived that an SSS constitutes a complex electronic system, but it is possible to design a system with simple mechanical keys.



It is yet to be seen whether this technical report will find its way into the latest revision of ISO11161 but there is no doubt that it will become an important document as mode selection, seen widely in machine tool and robotic standards, becomes more widely utilised.

If you have any questions about this article, implementing a safeguarding supportive system or any other machinery safety queries then your local Fortress representative will be more than happy to assist.