

DIGINNO Best Digital Transformation Practices

SSAB SmartSteel – Digital Identity for Steel

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SSAB is a highly-specialized global steel company driven by close relationships with customers. SSAB develops high-strength steels and provides services for better performance and sustainability. The company's production plants in Sweden, Finland and the US have an annual steel production capacity of approximately 8.8 million tonnes.

The Challenge

The challenge in steel production is that the material and associated information take different routes. The material is transported by road or rail, whereas the data about it is transferred for example by email. Items are marked, but the information relating to them is not easily accessible at the same location. The data lies in manuals, emails and archives.

When the material is produced further and the machine or piece of equipment needs repairing, it takes a while to find out what material has been used.

Steel is 100 percent recyclable, but wide-scale reuse and recycling of structures, components and materials call for new ways of material identification, marking and data management.

The challenge is that how does any part of a production chain have access to all data of any steel item regardless of where the item is processed.

Solutions

SSAB SmartSteel 1.0 is a concept designed to help solve this problem. Steel plate is marked with a unique identity code, which links the material and associated information, i.e. the exact history, composition, properties and instructions.

Then each link in the production chain can utilize and add to this data. The product is marked at the mill and the data is uploaded to a cloud service. Sheet bundles are scanned with bar codes and steel plates are scanned through the plate number. The customer uses the SmartSteel app to identify the product and obtain the right data. Customers can use the service to identify products, examine the properties of materials, download material certificates and give feedback.



Implementation process

- Functionalities: Mobile app to identify products, download material certificates and initiate claims.
- Bar codes are used to identify sheet bundles, coils and slit strips. Heavy plates are identified by scanning the plate marking.
- Once the product has been identified, the user can review the material, order information and also download material certificates. If there is something wrong with the order, the user completes the feedback form by adding the required additional information and attaching photos.
- The mobile application is available in App Store and Google Play Store.

Results and benefits

SSAB's SmartSteel 1.0 is the first version of the SmartSteel service. The mobile app is a beginning for continuous development. In the longer term, SmartSteel will be part of a platform where different actors can share data and solve problems together. In future steel will be able to communicate its properties and processing instructions to the machine that processes it. One of the benefits is that wide-scale reuse and recycling of structures, components and materials call for new ways of material identification, marking and data management. Steel is already fully recyclable, but there is need for better classification regarding steel composition, which will make it more efficient and attractive also to users to recycle steel. SmartSteel improves material efficiency throughout the manufacturing chain. Precision adjustment of machinery based on batch-specific information results in reduced waste and re-ordering. In addition, a common database will allow the development of new services without additional physical outlay.

Picture: SSAB