

Intelligent Pulp Solution

by Stora Enso Intelligent Packaging



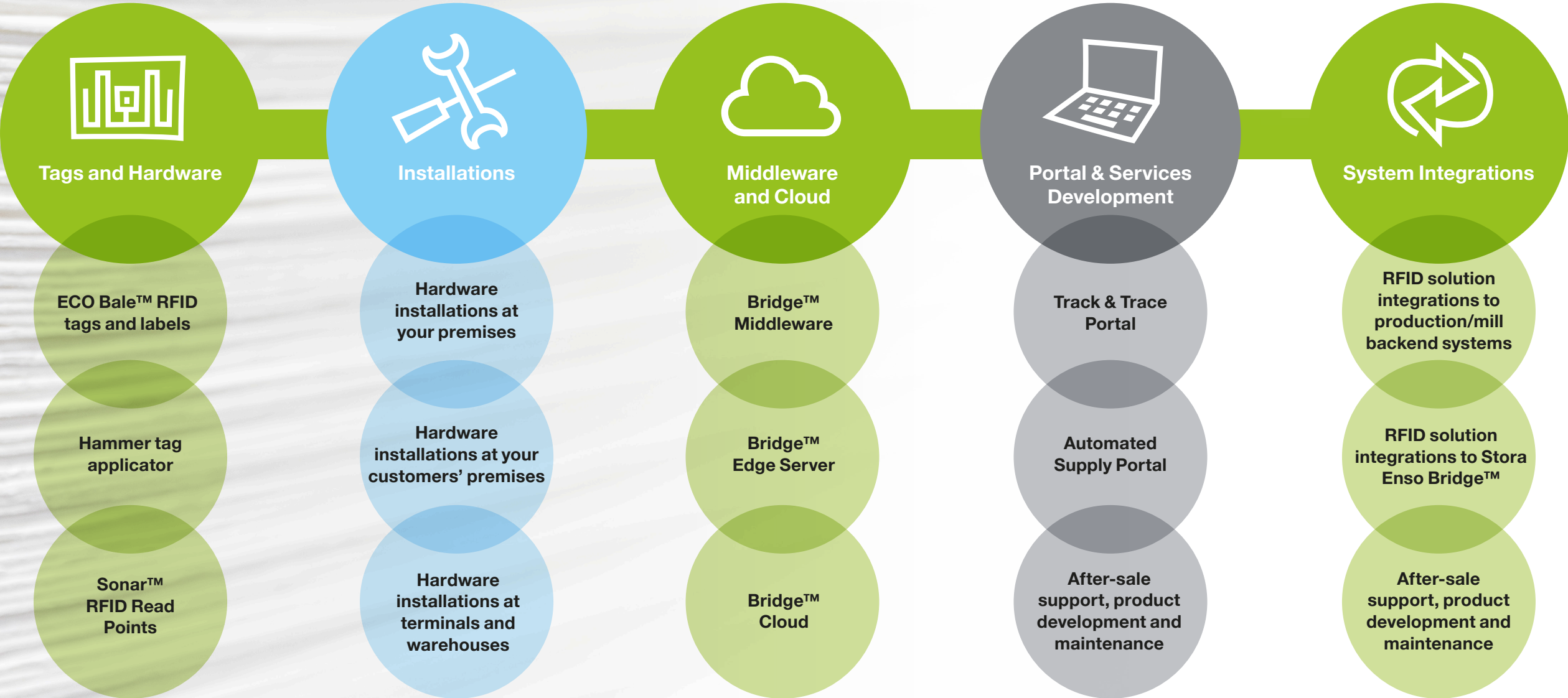
storaenso

Stora Enso produces yearly over 9 million tons of pulp in different grades and more than 2 million tons of that is sold globally. Based on our long history in the pulp business, we see a lot of hidden value in the pulp value chain. The lack of visibility and unit level traceability inhibits companies to realize the full value of the pulp.

With Stora Enso’s complete solution for the pulp industry, our clients can achieve full traceability across the value chain, unlocking value for producers, transporters, warehouse operators and consumers.

We offer a turn-key solution with everything from RFID tags and reading equipment to software and services. Read more about our solutions to see what they can do for your business.

Turn-key Solution by Stora Enso



Pulp Solution overview

Our solution starts and ends with our unique pulp industry-specific tag, **ECO Bale**. ECO Bale is a paper-based, repulpable, and fully water-soluble RFID tag with superior performance in the pulp supply chain.

ECO Bale is designed and optimized for tagging pulp bales and complies with the special requirements of the pulping process. Applied to the pulp bale, ECO Bale enables end-to-end traceability until the tagged bale enters the papermaking process and dissolves.

To efficiently apply ECO Bale to the pulp bale, we have developed the **Stora Enso Pulp Industry Hammer System**, consisting of the Hammer Central Unit, an off-the-shelf industrial-grade label applicator and RFID accessories. The Hammer system has been designed and built to maximize system uptime. All selected components are suitable for industrial environments with no compromises.

The Hammer System, in operation, will do (1) quality control of the tag (2) automated removal of under-performing tags (3) tag encoding (4) encoding data transmission to the selected database (5) tag encoding verification by integrated RFID reader and (6) tag application to the bale unit.



Stora Enso's paper-based ECO Bale RFID tag.

To read the RFID tagged Bale units at different points in the pulp value chain, Stora Enso offers pre-designed and tested **Sonar** reading systems for clamp trucks, gate reading points and much more. At every reading point, the data is captured by our **Bridge Middleware** for use in production and supply chain applications. The captured data may be fed via the **Bridge Edge Server** to our customers' systems and/or to the **Bridge Cloud**.

Stora Enso provides tailored and secure Bridge Cloud portals for monitoring and tracking the pulp supply chain from manufacturers to consumers.

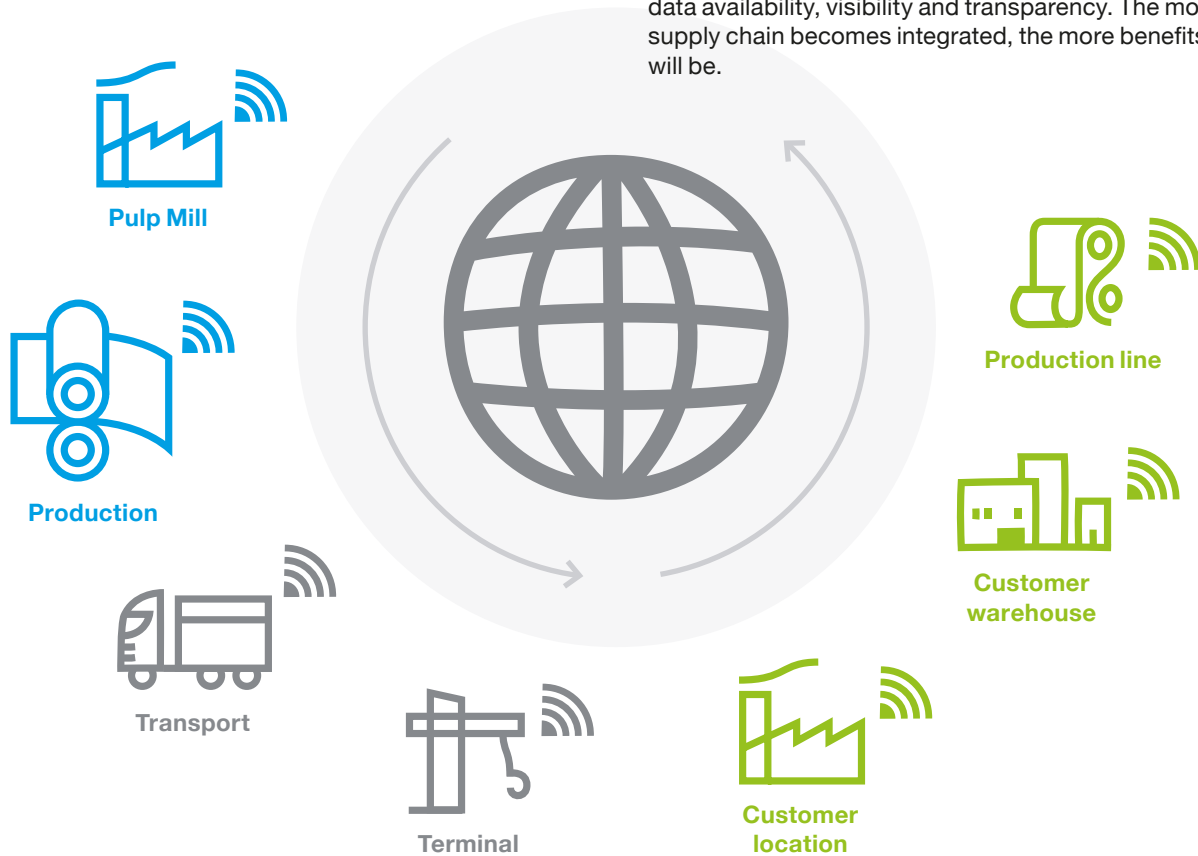
For all hardware and software components of the solution, we offer installation, integration and maintenance services, ensuring an industry-grade, turn-key solution for our customers.

Pulp Solution benefits

The pulp value chain is complex, global and involves multiple parties, which results in many interactions and data transfers in all steps of the pulp chain. Lack of visibility causes unnecessary buffers and confirmations, and a great deal of manual steps in readings or book-keeping.

There has been positive development with barcodes and printing, but this technology has limitations in demanding transport conditions and requires line of sight, making it inefficient and still manual in many steps of the process. In addition, pulp quality varies from unit to unit and these deviations cause inefficiencies.

With our solution there are benefits to be captured all along the value chain where all players will benefit from increased data availability, visibility and transparency. The more the supply chain becomes integrated, the more benefits there will be.



Benefits for Manufacturers

- Know at all time your products' stock level on real time
- Always send right products to right customers
- Optimize inventory levels
- Provide advanced quality information on a product level
- Vendor managed inventory monitoring

Benefits for Logistics

- Increase shipment visibility and accuracy – improved precision in ETA and delivery status
- Reduce transportation cost through increased visibility and optimized production

Benefits for Consumers

- Automate logging of the incoming pulp
- Automate stock counting – real time inventory levels
- Automate invoicing
- Possibility to optimize process according to pulp quality values
- Consumption Monitoring and Inventory & Consumption Forecasting

Contact us for more information:

www.storaenso.com/intelligentpackaging