



PRACTICE ABSTRACT

Digital technology

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# ULTRA HIGH FREQUENCY TAGS FOR ROUGH WOOD SURFACES

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Radio Frequency Identification (RFID) tags are small, low-cost objects that can be attached to materials and products to identify and track them throughout their lifecycles. However, some surfaces, like rough wood, do not allow the use of classical adhesive tags. Thus specific solutions have been developed to allow easy and fast tagging of rough wood surfaces. Data from Ultra High Frequency (UHF) RFID tags can be collated using special trackers.

Each tag contains unique information about the object it is attached to, such as timber or lumber, pallets, utility poles, and railroad ties. To read the tag, an RFID reader is required, and the tag must be close to the reader (typically less than one metre), but UHF tags with high reading range can be detected at larger distances (five to seven metres).

Being able to track assets with low-cost tags provides large advantages to companies transporting or delivering materials, allowing them to know the location of each item and to have a constantly up-dated inventory. By positioning RFID readers in strategic points in vehicles, depots, and so on, such a process can be automated, reducing the need for human labour.

<p><b>Application scenario</b></p> <p>Management, tracking/traceability, localization</p>
<p><b>Digital technologies</b></p> <p>Physical tags and interfaces to visualise collected data</p>
<p><b>Socio-economic impact</b></p> <ul style="list-style-type: none"> <li>▪ Economic: trust and transparency in value chains</li> <li>▪ Environmental: natural resources tracking</li> </ul>
<p><b>More info:</b> <a href="https://sundog-rfid.com">https://sundog-rfid.com</a></p>



## Purpose of the tool

The SUND OG® UHF RFID tags provide a reliable solution that stays fixed to rough wood surfaces, enabling real-time inventory management, fewer inventory losses, multi-tag readings, and long reading range capability. They can be left on the wood because they do not damage blades or other tools, thus they are safe to use even during processing.

## Description of the tool

RFID tags are low-cost objects that can be used to track goods, to locate things, and so on. Their use is widespread, and specific solutions have been developed to adapt them to difficult conditions, like rough wood surfaces (patented). Tags provide information about the object they are attached to once in the proximity of a reader; passive tags do not require a power supply (battery), thus typically exhibiting a small form factor. The use of antennas can provide high read range, but even in the case of antenna damage, close data reading is possible (tens of centimetres).

## Areas of socio-economic impacts

The use of RFID tags, labels, and similar technology can have a profound impact on management practices in companies, by enabling them to have up-to-date information on goods (final products, raw materials, etc.) in and outside their depots. Those data can be partially exposed to customers for trust and transparency purposes, while the use of automated systems, like readers installed in strategic positions, can reduce the need for human labour. Better coordination with other actors in the value chain can be achieved, and, in the case of natural resources like wood, tracking and control activities can be fundamentally improved.

<b>Economic</b>	Trust and transparency in value chain
<b>Environmental</b>	Natural resources tracking

