


## Description of innovation

| Innovation     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title          | Forest Information Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Picture        |  <pre> classDiagram     class ForestPropertyData {         Type ForestPropertyDataType     }     class ForestPropertyDataType     class reRealEstate {         &lt;&lt;association&gt;&gt;     }     class stStand {         &lt;&lt;association&gt;&gt;     }     ForestPropertyData -- &gt; ForestPropertyDataType     ForestPropertyDataType -- reRealEstate     ForestPropertyDataType -- stStand         </pre>                                                                                                                                                                                                                                                                      |
| Domain         | Digitalization                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Source of wood | Stemwood                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Location       | Finland                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Implementers   | Ministry of Agriculture and Forestry,<br>Finnish Forest Centre,<br>Forestry Development Centre Tapio,<br>Bitcomp Oy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Actual status  | Running                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Approach       | <p>Forest information is standardized so that actors engaged in the forest sector could develop and use harmonized information systems. Although basic concepts and measurement units have been defined for decades, almost every actor has implemented them differently in their information systems. Converting and transferring information is difficult or almost impossible between systems. Forest information standards facilitate the use of open materials and data transfer between actors. This improves operational efficiency and international competitiveness of forest sector.</p>                                                                                                                                                                          |
| Main results   | <p>Standard defines the structure, data types and codes used in different schemes. Forest information standards are based on XML-format (geometry: GML).</p> <p>Data to be exchanged with standards is: special feature data, forest compartment data, forest use declaration, timber trade, harvesting and operations. The projects outcome is: documentation, schemas, guidelines, practises. The outcome will be written XML files which are transferred between different systems. XML is used as it is international data standard, a method to structure electronic documents. XML-documents (=files) are readable and allows to import data into all systems capable of reading such documents. The structure of XML-documents can be validated automatically so</p> |

|                     |                                                                                                                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | it follows its definitions (=schema).                                                                                                                                                                                                            |
| Lessons learned     | The development of information exchange interfaces is not finished. The goal is a situation where all forest industry systems would read, write and send via a forest information standard.                                                      |
| Contact information | <a href="https://bitcomp.com/bitcomp-finland/">https://bitcomp.com/bitcomp-finland/</a>                                                                                                                                                          |
| Link to website     | <a href="http://www.metsatietostandardit.fi/metsatietostandardit/en">http://www.metsatietostandardit.fi/metsatietostandardit/en</a> ,<br><a href="https://www.bitcomp.fi/metsatietostandardit/">https://www.bitcomp.fi/metsatietostandardit/</a> |
| Code                | IN_DE_04                                                                                                                                                                                                                                         |

## Innovation assessment

|                                      |                                                                                      |
|--------------------------------------|--------------------------------------------------------------------------------------|
| Region                               | Finland                                                                              |
| Time scale                           | Since 2008                                                                           |
| Mobilization Potential               | 1 m <sup>3</sup> /ha                                                                 |
| Kind of wood concerned               | Stemwood                                                                             |
| Sustainability Potential             | Positive                                                                             |
| Impact on environment & biodiversity | Positive                                                                             |
| Ease of implementation               | Medium                                                                               |
| Economic impact                      | High with fully digitalization                                                       |
| Job effect                           | Better qualified staff / better operations and transport                             |
| Income effect                        | Positive                                                                             |
| Specific knowledge needed            | High, complex approach- Introduction to XML schemes                                  |
| Costs of implementation              | Ca. 3000 € / LogBuch unit; annual costs around 150 € (webportal) / few working hours |
| Technical readiness level            | Applicable in 5 years                                                                |
| Key information for adoption         | Involve all relevant stakeholders in the development                                 |