# Abstract template for the conference "A century of national forest inventories – informing past, present and future decisions"

Dear author. This is a two-page template that in the first page will ask for information on presenter name, topic, and preferred presentation form.

On page two, you are asked to fill in your abstract in the format and font size indicated. Please remember to include authors affiliation information in the footer section of page two. The length of the abstract may not be more than one page including references.

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| **Abstract title:** | | The role of NFI sample plots and multi-temporal remote sensing for keeping forest management plans continuously updated |
| **Take-home message:** | | Lidar data and optical data trained with NFI plots can provide data for forest management planning. Furthermore, multi-temporal remote sensing data provides growth and change information. This calls for an extended role for NFI plots, which also might influence design and data access. |
| **Presenter name:** | | Håkan Olsson |
| **Presenter contact info:** | | Håkan Olsson, Department of forest resource management, Swedish University of Agricultural Sciences<br>901 83 Umeå, Sweden, e-mail: hakan.olsson@slu.se |
| **General topic, see website:**<br>(please double click on the check box and activate the relevant one) | ☐ | Improving future NFIs by learning from the past |
| | ☐ | NFIs today and in the future |
| | ☒ | Cutting edge and futuristic inventory techniques and technologies |
| **Preferred presentation form:** | ☒ | Oral presentation |
| | | |
| | ☐ | Poster |
| *Abstracts will be reviewed by members of our scientific committee and you will be given information on decisions in due time after the submission deadline has passed.* | | |

# The role of NFI sample plots and multi-temporal remote sensing for keeping forest management plans continuously updated

***Håkan Olsson, Kenneth Nyström, Jörgen Wallerman, Eva Lindberg, Andre Wästlund, Arvid Axelsson, Mikael Egbert, Nils Lindgren, Mats Nilsson***

Lidar data trained with NFI plots can provide raster maps with key forest variables like tree height, stem volume, and basal area with an accuracy that is sufficient for forest management planning (Nilsson et al., 2017). In this contribution, the further possibilities to also obtain remaining key variables for forest management planning will be summarised using recent results and examples from the Remningstorp test site in southern Sweden. This includes the possibilities to obtain tree species with time series of optical satellite data as well as with multispectral lidar, and the possibilities to predict site index and growth from multitemporal 3D data from lidar or optical sensors. Together with the possibilities to detect forest damages from frequent optical satellite data and to record cuttings by using harvester data, we are facing the possibility to obtain forest data bases for management planning that are continuously and automatically updated.

NFI plot data will have a key role in realising a cost efficient implementation of this type of inventory system. Finally, it will be discussed which implications this development might have for the NFI´s. Will there be reasons to change the plot design when the plots will be more and more important also as ground truth for remote sensing products and which options exists for utilising NFI plot information also for the privately owned forest management plans?

**References:** Nilsson et al., 2017, Remote Sens Environ, 194, 447 – 454.

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