1. NFI IN SLOVAKIA

National forest inventories in Slovakia are realized for the first time. During 2002-2006 field data collection is performed in grid 4x4 km. The sampling unit consists of inventory plots IP and their number depends on the type of plots are used. A constant circle with the radius of r = 13.64 m for detecting forest inventories, J-value, and ecological characteristics. 8 transects, concentrators of r = 3 m and 12.62 m for detecting tree characteristics of dbh diameter d = 7 - 17 cm and d = 18 - 20 cm, respectively. Concentrators for the trees with diameter d < 7 cm, r = 1.8 m, or d > 20 m will be chosen as points for transect concentration. On an average, a constant circle with the radius of r = 25 m established for the inventory of forest edges, forest relics and water reserves.

In field works 6 configurations of Field-MAP 940 were utilized, 16 of them were used to control measurements. Applied software was Project Manager and Data Collector, versions 5. Field technology was used in addition with GIScope 60C. Field-MAP was permanently used during the inventory season from April to October.

2. TECHNOLOGY FIELD-MAP

It presents current highest technology for data collection of forest ecosystems. It is being developed by the Institute of Forest Ecology Research, Ltd. (IFER) - Monitoring and Mapping Solutions (Czech republic) from 1992.

https://www.field-map.co

3. ASSESSMENT OF TECHNOLOGY ACCORDING TO INDIVIDUAL ACTIVITIES USED IN NFI IN SLOVAKIA

3.1. Navigation

An indoor technology made easier navigation from navigation point and simplified accurate finding of IP in comparison with traditional techniques (map, compass). In the navigation there were used tracks with the starting 50-100 meters in forest and 30-60 m in free area. Vertical length of track in field works was from 1,000 to 3,000 m, usually they were measured 300-1,000 m.

3.2. Locating plot and subplots

Field-MAP realized easy determination of plots, mainly on the slopes with greater aspects through automated calculation of slope and distance to slope. The autofocus measurement using one and two characters in plot to determine is possible. Field-MAP could also damage the vegetation and other evaluated elements.

3.3. Targeting the objects and position

We are less satisfied with the accuracy of determining the points with GPS in terms of projection on tree from the direction of targeting, or from the side left for detection. The results of measurement of other marked permanently in field, that the position of trees is not correct.

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3.4. Measuring of trees heights

Field-MAP technology enables easy determination of heights of trees and crossing setings. Map of measurement with the use of tree profile, projection on tree and the projection on the object is made in a simple way, in which it is possible to determine the projection of tree to cooperate with the IP to several points from the position of the object

3.5. Recording of data and preliminary check-up

Automated input of data into computer in the field saved the time for further editing. Check-up of data is done in core computer already during recording (spatially and quantitatively checked) and is possible for different objects as well as for the whole area.

4. ASSESSMENT OF TECHNICAL PARAMETERS (RESISTANCE, ERGONOMICS)

4.1. After permanent use of the FM in difficult field conditions we assess its usability as suitable. Despite that we want to show at some occurring problems. Field-MAP presented some resistance of instruments recommended in the manual to humidity and air, or even in extremely bad weather. Water resistance of field computer showed good behavior, but despite that the whole technology can be used in unfavorable weather only in such extent that it is suitable for the least resistant part. In case we had to change measurement to not accessible and very wet conditions, we had to change measurement to not accessible and very wet conditions, we had to change larger number of plots in a day.

4.2. Field-MAP consists of several components what reflected also construction in the field. In addition to instruments and software also performance in terms of mobile and transport by two people. The software included also performance in terms of mobile and transport by two people. The software included also performance in terms of mobile and transport by two people. The software included also performance in terms of mobile and transport by two people.

4.3. The system field computer requires permanent recharging of batteries by additional battery charger or additional battery packs. The unit includes also additional battery charger or additional battery packs. The unit includes also additional battery charger or additional battery packs.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Based on practical experience and control measurements with Field-MAP during two years in Slovakia we can state that this technology proved to be very well and is free of required parameters.

5.2. In case of multiple light movements, the data collector and the computer can be used in unfavorable weather and conditions.

5.3. The design of Field-MAP is suitable for usage in all types of terrains and for the usage of all types of terrains.

5.4. It is necessary that there are used the latest software versions and to observe strictly generally known or some specially determined rules for gathering field data.