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Forest Road Standard Registration

Authors: Bjerketvedt Jan

Norwegian Forest and Landscape Institute, Norway, jan.bjerketvedt@skogoglandskap.no

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In Norway we have more than 45 000 kilometers of private forest truck roads. They have mainly been built between 1950 and 1990. During this period and later both construction methods and road standards have changed. To be able to improve our knowledge about our existing forest road network we need to find methods of efficient road standard registration. With an updated road data base one has a tool both for planning of new roads and to prioritize the rebuilding of existing roads, it is vital in transport planning, and it can be used for analysis regarding water related challenges like erosion and landslides. The main difference between Norwegian forest truck road classes is the gradient, - both alone but also in combination with road width and curve radius in curves. With increased allowable length and weight on the timber trucks the standard of existing roads might be a bottleneck in many areas. In this project the centerline of a 4 kilometer long forest road in steep terrain has been registered using different car mounted GPS solutions under varying driving speeds, field registrations with both surveying instruments and clinometers, and office based GIS analysis of map and LiDAR-data (up to 10 pts. per m²). The different centerline registrations will be compared both in horizontal (curves) and vertical (gradient) position with the measurements from the surveying instrument and with the clinometer measurements representing today's practice. The project will produce practical recommendations for forest road standard registration.