Roadscanner - Forest road condition monitoring sensor



Mounted at the towing hitch, sensor values are collected and the road quality of unpaved, single lane roads gets assesd. Ultrasonic sensors (cross section scan of a road segment) acceleration sensors to assess the longitudinal roughness and a GPS sensor for locatiion.

Scanner is under constant development. A measuring device, mounted at the towing hitch of a car. Sensors collect values, to assess the road quality of unpaved, single lane roads. The system consists of ultrasonic sensors to scan the cross section of a road segment, acceleration sensors to get information about the longitudinal roughness and a GPS sensor for locating the information. After data collection, an open configurable software bundle (implemented as GUI modules in iFOS) allows individual settings for the single sensor thresholds and algorithms to adopt the system to the own road maintenance concept. Mounted at the car of the forest ranger an easy and frequent data collection is possible and provides an early and objective knowledge about the constructional decline of road segments. Maintenance costs can be reduced and reconstruction measures get execute mor accurate. A logical data interpretation of the sensor values is possible. The assignment of the sensors towards different decay expressions on the road surface was conducted and semi- automatically related to road quality segment classification. Results show, that a single manual optical assessment of road segments miss first phases of road decay and underlines the potential of such systems. Tests and calibrations of the road-scanner allows a good data interpretation for the set task. Many degrees of freedom of the scanner and the data interpretation still leaves some open research questions.

MORE DETAILS

CHALLENGE ADDRESSED

2.- Improve infrastructures and capacity of public actors

DOMAIN

Inventory, monitoring

Forest management, ecosystem, resilience

Harvesting, infrastructure, logistics

TYPE OF SOLUTION

Sensors, measurement equipment

KEYWORDS

Monitoring: Road Condition; Unpaved

DIGITAL SOLUTION

Yes

INNOVATION

Yes

COUNTRY OF ORIGIN

Germany

SCALE OF APPLICATION

Cross-border/multi-lateral (several countries)

START AND END YEAR

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CONTACT DATA

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https://www.wald-und-holz.nrw.de/aktuelle-meldungen/2016/forstliches-bildungszentrum-von-wald-und-holz-nrw

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REFERENCES AND RESOURCES

MAIN WEBSITE

https://www.wald-und-holz.nrw.de/aktuelle-meldungen/2016/forstliches-bildungszentrum-von-wald-und-holz-nrw

PROJECT WEBSITE

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PROJECT REFERENCE

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RESOURCES

FORMEC conference paper (2016)

PROJECT UNDER WHICH THIS FACTSHEET HAS BEEN CREATED

Rosewood 4.0

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