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.

PIù DETTAGLI

SFIDA RISOLTA

2. Migliorare le infrastrutture e le capacità degli attori pubblici

DOMINIO

Inventario, la valutazione, il monitoraggio

La gestione forestale, selvicoltura, i servizi ecosistemici, resilienza

La raccolta, le infrastrutture, la logistica

TIPO DI SOLUZIONE

I sensori, apparecchi di misura

PAROLE CHIAVE

Monitoring: Road Condition; Unpaved

SOLUZIONE DIGITALE

Sì

INNOVAZIONE

Sì

PAESE D'ORIGINE

Germania

SCALA DI APPLICAZIONE

Transfrontaliera / multilaterale

INIZIO E FINE ANNO

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CONTATTI

PROPRIETARIO O AUTORE

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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

SITO PRINCIPALE

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

SITO WEB DEL PROGETTO

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PROGETTO DI RIFERIMENTO

RISORSE

FORMEC conference paper (2016)

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PROGETTO NELL'AMBITO DEL QUALE QUESTA SCHEDA è STATA CREATA

Rosewood 4.0

DATA DI INSERIMENTO

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