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	DOMINIO	TIPO DI SOLUZIONE
2. Migliorare le infrastrutture e le capacità degli	Inventario, la valutazione, il monitoraggio	I sensori, apparecchi di misura
attori pubblici	La gestione forestale, selvicoltura, i servizi	
	ecosistemici, resilienza	
	La raccolta, le infrastrutture, la logistica	
PAROLE CHIAVE	SOLUZIONE DIGITALE	INNOVAZIONE
Monitoring: Road Condition; Unpaved	Sì	Sì
PAESE D'ORIGINE	SCALA DI APPLICAZIONE	INIZIO E FINE ANNO
Germania	Transfrontaliera / multilaterale	

CONTATTI

PROPRIETARIO O AUTORE	REPORTER	
Thüringenforst	BFH Berne University of Applied Sciences	
Sergej Chmara	Moritz Dreher	
ffk-gotha@forst.thueringen.de	moritzkaspar.dreher@bfh.ch	
https://www.wald-und-holz.nrw.de/aktuelle-meldungen/2016/forstliches-		
bildungszentrum-von-wald-und-holz-nrw		

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

RISORSE

FORMEC conference paper (2016)

PROGETTO DI RIFERIMENTO

PROGETTO NELL'AMBITO DEL QUALE QUESTA SCHEDA è STATA CREATA

Rosewood 4.0

DATA DI INSERIMENTO

12 Ago 2021







This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 862681

A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY



