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.

MAIS DETALHES

DESAFIO ABORDADO

2. Melhorar as infra-estruturas e a capacidade dos actores públicos

DOMíNIO

Inventário, avaliação e monitorização

Gestão florestal, silvicultura, serviços do ecosistema, resiliencia

Cortes, infraestruturas e logistica

TIPO DE SOLUçãO

Sensores, eequipamentos de medição

PALAVRAS-CHAVE

Monitoring: Road Condition; Unpaved

SOLUçãO DIGITAL

Sim

INOVAçãO

Sim

PAíS DE ORIGEM

Alemanha

ESCALA DE APLICAçãO

Além fronteiras/ multilateral

ANO DE INíCIO E FIM

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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

WEBSITE PRINCIPAL

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

WEBSITE DO PROJETO

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REFERêNCIA AO PROJETO

RECURSOS

FORMEC conference paper (2016)

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PROJETO NO âMBITO DO QUAL A FOLHA DE DIVULGAçãO FOI CRIADA

Rosewood 4.0

DATA DE ENTRADA

12 Ago 2021

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY