INNOVATION IN THE FIELD OF WOOD TRANSPORT IN FRANCE

52 International Symposium on Forestry Mechanization
06 - 10 October 2019 - Sopron (Hungary)
Some key-fact to introduce

✓ In France:
  • More than 900 companies
  • Mostly SMEs of less than 20 employees
  • 95% of roundwood volume in France is transport by road
  • Average supply radius of 95 km

✓ Forest roads: strategic infrastructure for the development of the forest sector

✓ Regarding forest road database:
  • Many initiatives at regional levels
    - lack of consultation
    - different communities coexisting as silos

Need to set up a long-term national tool with all stakeholders in the sector
A national dynamic

✓ A first phase for producing a shared and collaborative national database
  • Analyze existing data-base
  • Create a national standard

Describe all information needed in a forest roads database
  
  From the forest to the factory

• Implement a tool for sharing and validate data

✓ In the same time :
  • Test some new approach to collect data regarding wood transport
    − Qualification by use
Analyze

✓ Overview of all pre-existing regional initiatives (still on-going ones and past major initiatives)
  • 14 local initiative and 2 international approach
  • For each of them we collected:
    – technical information
      • data collected
      • Area covered
      • Qualification and digitalization methods...
    – general information
      • Financers
      • Contributors
      • Data managers
      • Governance, conditions of access, centralization process, services offered...

✓ Lot’s of diversity!
The specifications were confronted in order to validate a data model consistent with the contexts of use and expected levels of precision.

→ 30 people, representing 20 different organizations took part in the 3 different meetings.
Analyze and create a national standard

✓ The standard:
  • divided in three themes:
    - Road Section
      - 42 attributes
    - Equipment
      - 13 attributes
    - Stress Point
      - 25 attributes

On line (but in French, sorry):
http://cnig.gouv.fr/?page_id=18535
Online tool to collaborate

- A common basic tool where data can be:
  - Upload by actor
  - Qualified online
  - Share and consolidate

- WORK IN PROGRESS!
New approach to collect data

How can we collect data on forest road in a fast and collaborative way?

✔ Testing : qualification by use
  - Based on the monitoring of uses and practices.
  - Does not require time or direct actions on the part of carriers.
  - Sensors monitor the activities of a truck and feed the system from the use the vehicle makes of the network

  • Can provides information on:
    - stress point
    - accessibility class of the roads
    - travel times
    - average speeds over a given road segment...
Identify case-study for automatic processing:

- Identify 7 different scenario of incoming data:
  - “The best world”, No linear on base, Measurement error…

Build the automatic treatment of the data:

- 3 major step
  - The reception and control of the data
  - Management / update of the linear
  - Management / update of the point

Working under:

- ArcGIS / Python

Scenario 1: « the best world »

- Data received without too many interference
- Existing linear in the base

→ Update of linear information / identification of potential stress point
Design of the computer processing

✔ At the end
Testing the solution

✓ The material:
  • GPS measurement send via GSM
  • Daily report

✓ Data set transmitted by 7 different trucks during 11 months.
  • More than 5 million GPS points were recorded
  • About 524 days of activity

✓ The majority of carriers have left the beacon plugged-in continuously
  • The beacon was quickly integrated into their environment and routine.
The result

- More than 550,000 measurement points within the study area (less than 25 m from a forest)

  - Resulted in the qualification of approximately 1,250 km of road were qualified over the 25,000 km that included the database serving input.

  - 5% of the network
    - 7 vehicles
    - 524 working days

(Sections with less than 10 measurement points were not included in these figures)
The result

✓ The area of « Chablais »
  • 3 beacons have been active for 11 months
  • 810 km qualified:
    – 30 % of the database
The result

- Time effect...
  - Within less than 3 month: ¾ of the 1,250 km were mapped and characterized
    - At least one time!
  - After: slower phase of “consolidation”, unmeasured section discovery is less frequent.
Perspectives

✓ Still some work to do:
  • Long term business model of the national base
  • Access to open source data
    - misuse of the database for recreational purposes
    - against the wishes of private forest owners
  • Carry on the deployment of the first tool

✓ Collaborative work will continue…
  • A network of active and participative actors is now in place!
  • Opportunities presented by new approaches suggest positive ways to implement the national base.
Thank you for your attention

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