Mobile throughout the year in mountainous regions

All-wheel-driven special utility vehicle with wheel and caterpillar drive

The project idea

To be mobile in mountainous terrain year-round is a substantial requirement for many occupational groups and organizations all over the world. For example Mountain and Ski Chalets in the winter often depend on expensive and complex transports by cable car, helicopter or groomer to secure the gastronomic supply. Where snow slopes do not lead up to the hut, snowmobiles are used, that are however limited to winter use. Also mountain rescue services in places that are inaccessible by helicopter often depend on snowmobiles. In these rescue operations the rescued person is transported in special trailers, which holds considerable risks.

Within this EraSME project eight research and industrial partners from four European countries set themselves the target to develop a transport vehicle that solves those problems.

The product and its innovation

The result of the collaboration is going to be a transport vehicle with the following features:

- compact
- closed, heated body
- suitability for material and passenger transport
- off-road capability in any season, even in extreme weather conditions
- reliable quality and long lifetime
- repair-friendly technology
- low maintenance cost and fast service

The serial hybrid drive of the vehicle consists of an internal combustion engine as the power source for four independently controllable electrical wheel hub motors. Due to the permanent operation in the optimum the motor works very efficient. The application of such motors in the ATV sector is a novelty.

The chosen design allows an easy conversion to future emission-free model series with fuel cells or battery packs. Like that the use of cleaner drive units, that will be available in the market in the near future, is prepared in the construction. By consistent lightweight engineering and usage of alternative Materials a high efficiency is already achieved in the first stage maturation level. By equipping the vehicle with foldable benches it is suitable both for passenger and material transport. Depending on seasonal requirements driving wheels or caterpillar is possible.

Market and customers

In contrast to the wide range of wheel driven transport vehicles, in the field of caterpillar driven vehicles there is currently a gap in the market which can be closed with this new development. The price of the vehicle will be in the range between snowmobiles and groomers.

In addition to the aforementioned potential numerous other facilities such as cable car companies, fire departments, military facilities and construction companies are possible customers. Additionally this concept is also suitable for Polar Regions.

Due to the enormous variety of use cases for these vehicles the project partners expect it to be a big success on the market.

The combined technical expertises of the transnational consortium will be a key to success.

The cooperation partners

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