

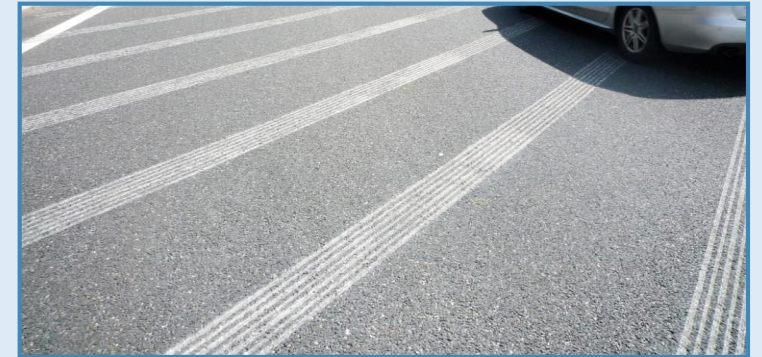
AQUATEC

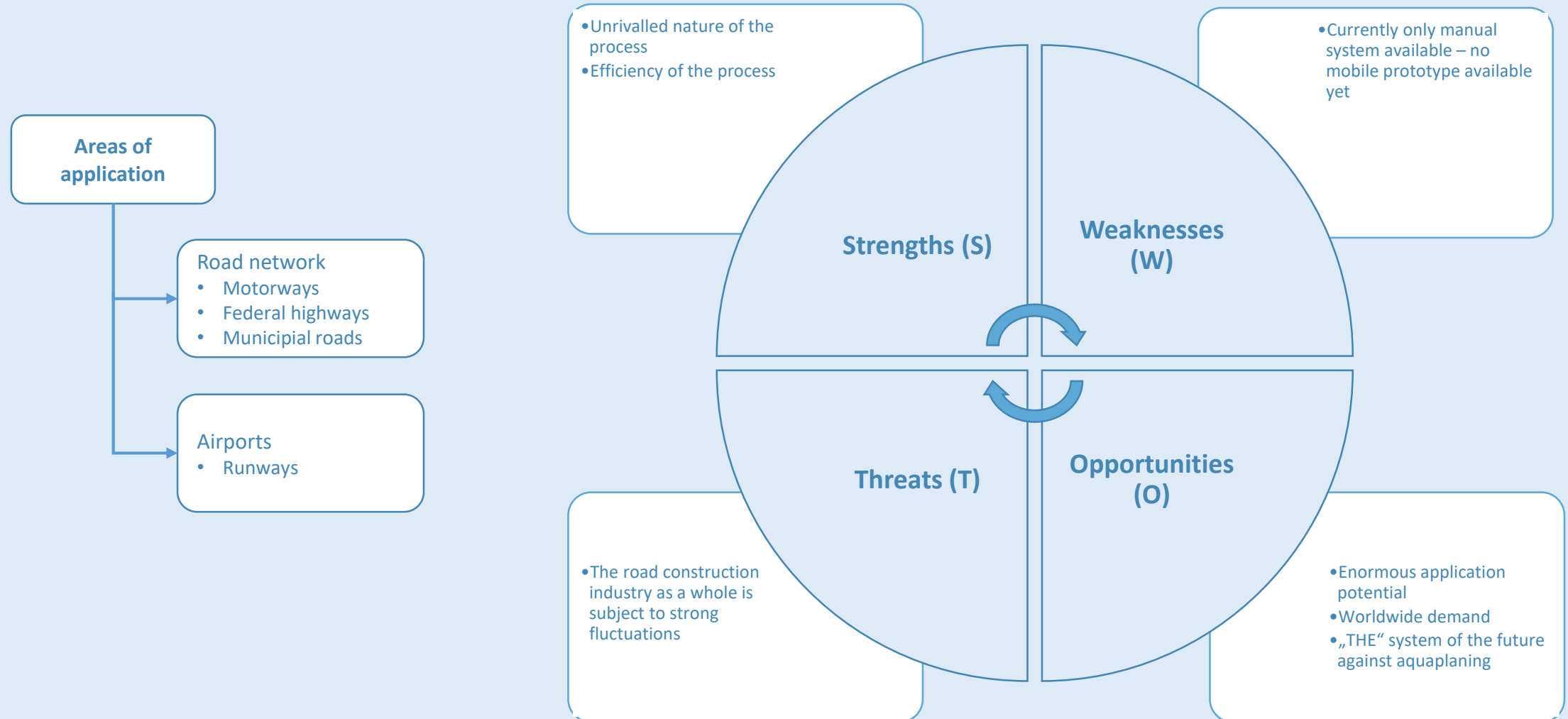
AQUAPLANINGSYSTEM – AQUAGROOVER[®]



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- **Origin** Austria
- **Patent holder** Aquatec IQ Technologie GmbH
- **Patent designation** Aquaplaningsystem – Aquagroover® milling system
- **Patent content** Milling machine for the surface or strip milling or grooving of asphalt, concrete or other surface courses or road surfaces
- **Countries** Europe, USA, Canada, Brazil, Russia, UAE, India, China, Japan and Australia



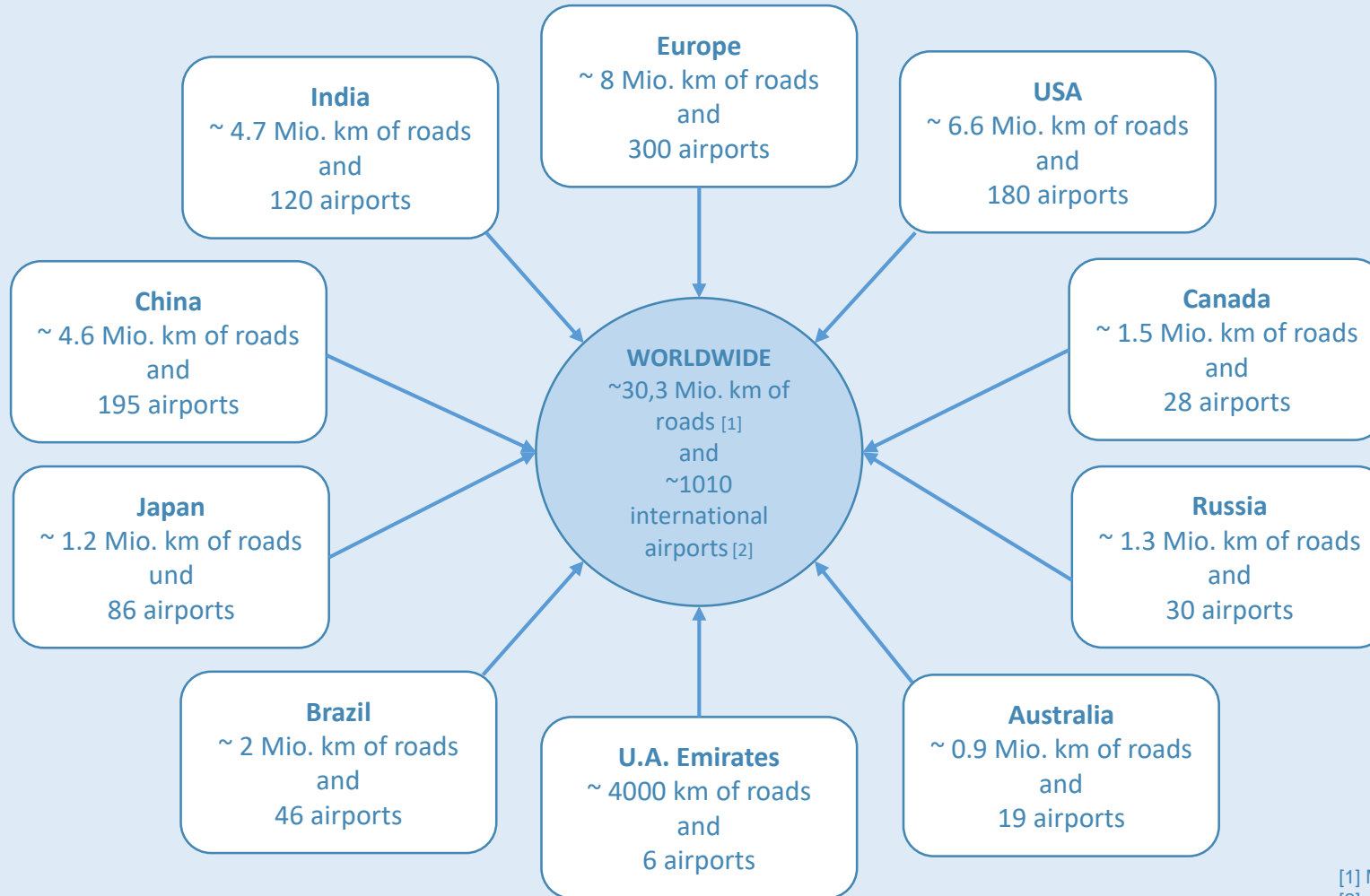


- The present invention, filed for international patent application, comprises a truck milling machine together with a method for specifically milling and grooving asphalt, concrete and other road surfaces.
- The main area of application is the roadway area. The application can take place in any road as well as in the airport runway area and serves, apart from some other additional application possibilities, mainly as prevention for the aquaplaning-effect.
- The aquaplaning-effect is when excess water build up on the road surface. The resulting film of water prevents contact between the vehicle's tyres and the road. This circumstance of so called „floating-up“ leads to a reduced steering and braking ability and in extreme cases to a total loss of control of the vehicle. Aquaplaning is a frequent cause of severe accidents and contributes to an increased road safety risk. Road builders, operators and maintainers around the world are continually confronted with this problem.
- Not only the entire road network is affected by this problem, but also all runways at airports.

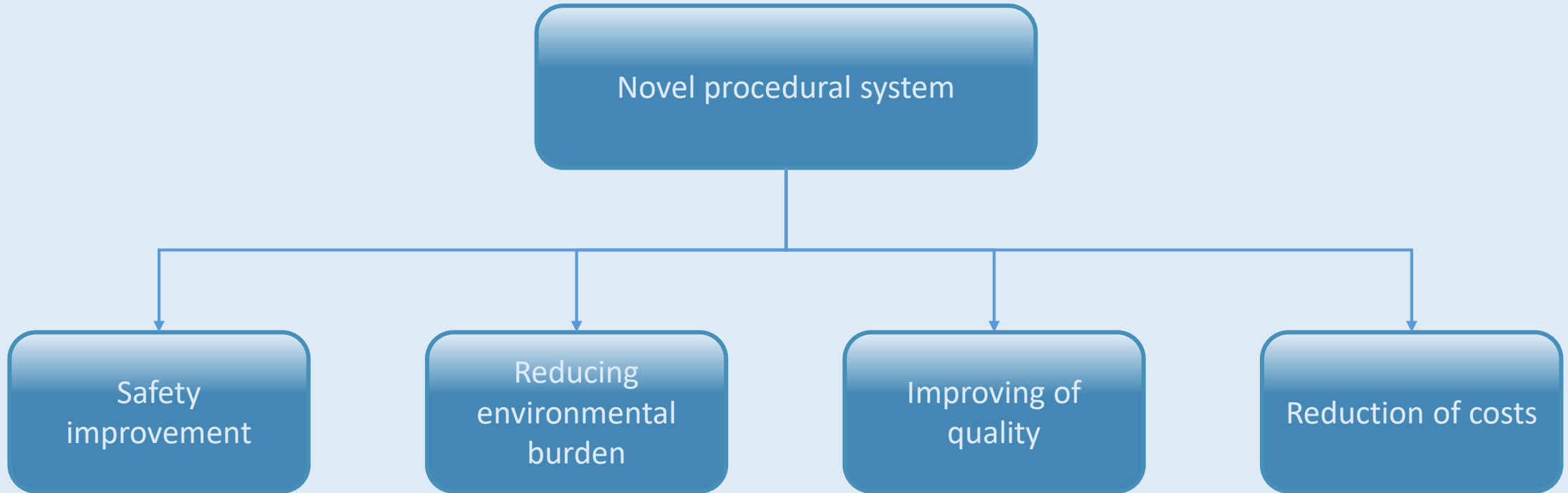


- The novel system was developed to avoid the problems with aquaplaning. Essentially, a new type of grooving system, accurate to the millimetre, is milled into the road at neuralgic problem areas – in particular in the area of low-drainage zones or at transverse slope transitions – by means of a milling machine mounted on a truck and electronically controllable. The truck is equipped with a special laser measuring and levelling system. At the same time as the milling operation is taking place, the residues of the milling process are cleaned off into a container, which is also mounted on the truck.
- The special groove system massively improves the drainage of the existing road surface and thus leads to a significant reduction in both the risk of aquaplaning and the formation of ice on the road.
- The invention comprising the groove milling process as well as the mobile truck milling machine used for this purpose is 100 % owned by Aquatec IQ Technologie GmbH and has so far been patented in a total of 31 countries over the world under the name „Aquagroover®“. All equivalent groove milling processes are also included in the patent.





[1] Motorways, expressways, and federal highways
[2] excluding military and other civil & private airports



- **Safety improvement**
 - Significant reduction in the risk of aquaplaning and the resulting risk of accidents due to improved water drainage and thus drainage of the treated areas
 - Significant reduction in the risk of icing and the resulting risk of accidents due to improved water drainage and thus drainage of the treated areas
 - Considerable reduction of the mentioned dangers (see above), also specifically through efficient elimination of water accumulation in the area of road markings



- Reducing the burden on the environment
 - Significant reduction of noise pollution during use due to a mobile and modular system and a special milling technology (round edges)
 - Considerable reduction of dust pollution by combined milling and suction into a container (both mounted on the truck)
 - Generally less environmental impact due to a significant reduction in working hours and, consequently a remarkable reduction in the number of shutdowns
 - Overall less environmental impact due to a special milling method and system and associated reduction of closure times
 - Less environmental impact due to a noteworthy increase in the lifespan of road surfaces



- Improving of quality
 - Rounded edges and clean grooves compared to brittle edges and unclean grooves as seen with other processes
 - High quality and applicability for all road surfaces regardless of their type (asphalt, concrete, other materials), their age and their condition
 - Increased process accuracy due to built-in laser measuring and laser levelling system
 - Reworking (re-milling) possible at any time
 - Carrying out the groove milling already in the construction phase of the road is possible and reasonable
 - Milling with rising or falling gradient possible
 - Increasing the lifespan of the road surface
 - Suitable for any commercial truck model



- Reduction of costs
 - Remarkable reduction of manpower and working time (by up to 2/3)
 - Significant reduction in the closure times of the road-sections to be worked on
 - Can be used on different construction sites due to the mobility provided by the automated truck body compared to expensive transport, installation and adjustment costs of other systems
 - Versatile applicability due to simple conversion of the modular system
 - Groove milling with wet/dry extraction
 - Surface milling with wet/dry extraction
 - Pure wet/dry extraction
 - Carrying out groove milling already in the construction phase of the road is possible and reasonable
 - Increasing the lifespan of the road surface

