

IOT

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IoT as part of PTC training part 2



SMART PUMP



- **Product description:**
- Smart water pump. Gives the user, the seller and the producer the opportunity to understand much more about the use of the pumps, the pump conditions and the design futures of the pump. Evergreen design might be possible if the software could be updated, maybe to extend pump life for example.
- The pump sends back geo position and continual flow measurements.
- Depending on geographic position you could envision connectivity via lan or wlan if the pump is used in a networked industrial setting. New 5g capabilities will be very cheap and could also be utilized if outside of local network areas. New capabilities arise all the time, so maybe LoRa is better and easier for a city context.

SCP STACK



- Smart Apps –**visualize for user how the pump is performing, being used. Alarm management by edge calculations of internal data (such as increasing friction) should be managed at app level.**
- Analytics
 - **map where used against geography or infrastructure.**
 - **Understand usage to understand future spare parts needs, service needs, new design needs, new product opportunities.**
- Connectivity – **5g, LAN, WLAN, LoRa etc.**
- Sensors – **gps and flow meters**
- Product Infrastructure - **Pumps**

WHAT HAS BEEN SOLVED?



- Users, problems, solutions
- City municipals – flood prevention – by connecting smart pumps via LoRa it would be possible to understand usage of the drain pumps systems and their status.
- Drainage pump users – continually used to drain private or industrial properties – need to be monitored easily for maintenance and capacity constraints. Information should also be shared with R&D, to find new usage for old designs and to get input to new designs.
- Mines and similar industrial settings. More and more areas are targeted to be free from humans, to lower accident risks. These environments need more and more smart peripheral equipment. Both for easy control/management but also for the more and more autonomous edge system to be able to collaborate. Water levels might have to be lowered based on excavation needs and that can be decided to some degree by the equipment themselves at the edge.