**Networked Grain Aeration**

Preservation of grain from harvest to consumption has always been a challenge. Even after significant advances, loss from spoilage and the resulting food contamination remain big problems. One advance to bring major improvement is aeration. However, current practice delivers a small portion of the potential benefits that aeration can provide. Networked grain aeration can deliver the full potential and open new doors.

The reason to build a network to manage grain aeration is that current practice does not deliver the minimum required result of eliminating spoilage. This concern does not center around the loss of the spoiled bushels, but rather the contamination of the good grain. A networked solution is the most economical means to achieve this minimum acceptable result.

A network can provide simple advantages such as watching for burned out motors and providing ease of operation. The real value is that it can deliver advanced grain management without limitation due to the operator. These advanced methods can improve the usability of grain. The level and uniformity of moisture content in grain impacts shipping, processing, and food safety.

The network that delivers the core function of regulating grain aeration can be a foundation for synergistic uses. Effective aeration control requires data such as the amount and type of grain as well as local weather. Availability of this data at a central location presents new opportunities.

Knowing the owner, location, volume and condition of grain presents new merchandising opportunities that increase efficiency and provide the framework for trace-ability and supply chain management. This requires the network to be highly secure and managed with integrity so an honest broker role can be provided between buyer and seller. Also, it is likely the government will come to rely on this data for its' monthly grain stocks reports.

This data will enable modeling of a grain bin to provide assurance that conditions did not support fungal or insect growth at any time during storage. This could be included as part of a food safety effort by independent food companies or as part of requirements that emerge from the "farm to fork" initiative for food safety of the FDA.

There are approximately seven million horsepower of aeration fans in the US. A network will enable load shedding on demand for electric utilities without endangering the grain if sufficiently intelligent. This will provide significant cost savings to electric utilities in the US Midwest.

Such a network will also reduce risk for lenders. In addition, a risk management solution can be built upon this infrastructure that would allocate risk to insurers rather than to grain storage operations. New financial products would be possible, including pre-buying grain for future delivery but utilizing the current storage.

SentryTGM is poised to deliver Target Grain Management as a networked solution for grain aeration to deliver all of this potential.