

Commercialization of VTT's Ice Prevention Know-How for wind turbines

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What is Wicetec Oy?

VTT is in process of transferring VTT's Ice Prevention Know-How to a spin-off company, Wicetec Oy. The arrangement will enable us to offer Ice Prevention System as a product and to serve our customers in more flexible way.

Time schedule?

The spin-off company will start its operations in spring 2014.
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WICETEC

Wind & ice technologies

Who are we?

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History

Since early nineties VTT has successfully developed knowledge, tools and solutions to keep wind turbine blades free of ice while in operation. The aim and focus in this development work has been to maintain high availability and performance with minimal system consumption during severe winter conditions.

VTT has commercialized the know-how both by licencing it to a 3rd party solution provider in late 1990's, known in the market as JE-system by Kemijoki Arctic Technology Oy, and later by customizing the technology to the requirements of the OEM under commission projects covering the design, manufacturing, pilot implementation, follow-up and licensing of an Ice Prevention System.

Based on market feed-back there is a call for product provider instead of a technology development and licensing.

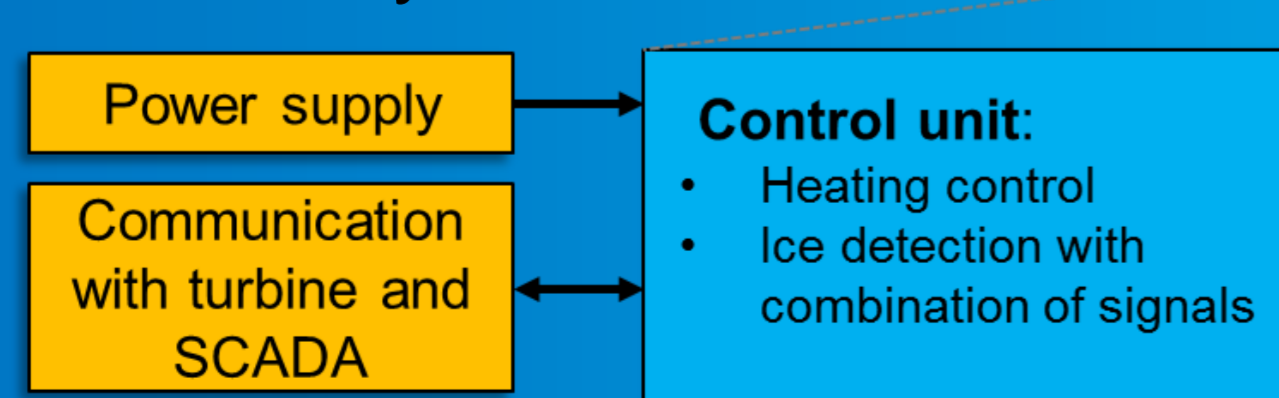
System description

Ice prevention

- Engineered to perform while turbine is in operation, de-icing mode also possible
- Intelligent control with minimized own consumption (~0,2% of AEP)

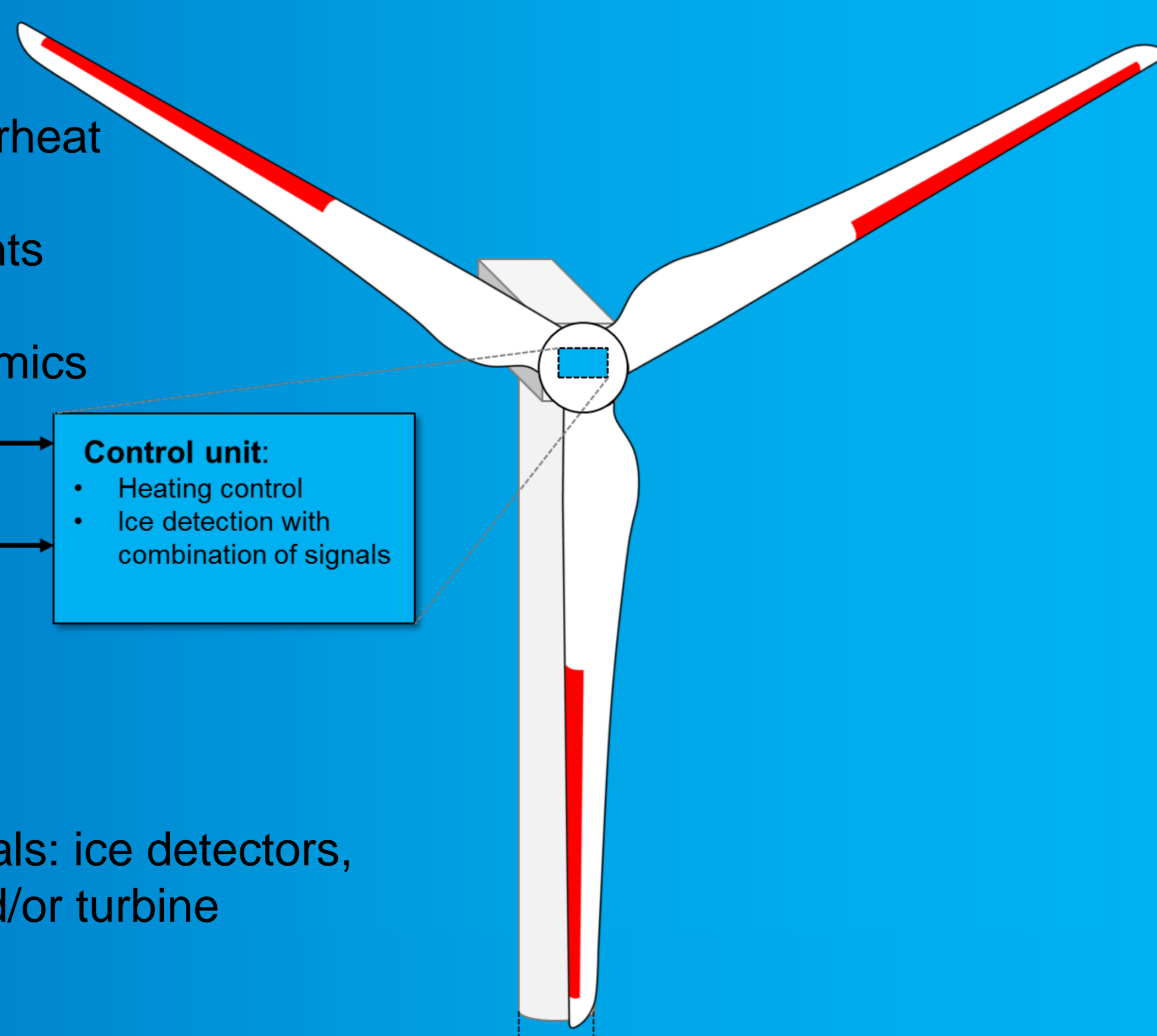
Heating elements

- Close to blade outer surface
- Temperature control and overheat protection
- Factory installation of elements and cabling
- Negligible effect to aerodynamics



Ice detection

- Combination of signals: ice detectors, weather sensors and/or turbine operational data



Track record

Research installations:

Site Location:	Size:	Year:	OEM:
Pyhätunturi (FI)	2.5 kW	1991	-
Jyppyrä (FI)	65 kW	1993	Nordtank
Pyhätunturi (FI)	220 kW	1993	Wind World
Total	287.5 kW		

Demonstration and Commercial installations:

Site Location:	Size:	Year:	OEM:
Lammasoaiivi (FI)	2 x 450 kW	1996	Bonus
Olostunturi (FI)	5 x 600 kW	1998-99	Bonus
Suorva (SE)	600 kW	1998	Bonus
Rodåvålen (SE)	600 kW	1998	Bonus
Pori (FI)	4 x 1 MW	1999	Bonus
Kotka (FI)	2 x 1 MW	1999	Bonus
Uljabuouda (SE)	(4+6) x 3 MW	2009-10	Winwind
Jokkmokksliden (SE)	1 x 2.5 MW	2010	Nordex
Jokkmokksliden-Storliden (SE)	14 x 2.5 MW	2011	Nordex
Blaiken I (SE)	30 x 2.5 MW	2012-13	Nordex
Blaiken II (SE)	30 x 2.5 MW	2013	Nordex
Vardkassen (SE)	2 x 2.5 MW	2012-13	Nordex
Total	233 MW		