Transcript

ASTUTE 2020's collaboration with British Rototherm

Time	Audio	Video
00:00:00	ASTUTE 2020 (Advanced Sustainable Manufacturing Technologies) is a multi-university partnership of five Welsh Higher Education Institutions, part-funded by the European Regional Development Fund through the Welsh Government. The ASTUTE 2020 team of world-class academics and highly qualified technical experts will collaborate with industry to address manufacturing challenges and develop sustainable higher value goods and services for the global market.	Instrumental music in the background. ASTUTE 2020 (Advanced Sustainable Manufacturing Technologies) logo. Drone footage of Swansea University Bay Campus. ASTUTE 2020 Higher Education Institution Partner logos - Aberystwyth University, Cardiff University, Swansea University, University of South Wales and University of Wales Trinity Saint David. European Regional Development Fund logo. Swansea University, College of Engineering building leading onto an ASTUTE 2020 Project Officer looking at a computer screen with computational modelling

		simulations on it. ASTUTE 2020 project officer looking down a microscope and a Kuka industrial robot moving about in sequence.
00:00:31	Hi I'm Oliver Conger, I'm the Managing Director and Owner of British Rototherm. We're a 170 year old organization and we manufacture precision instrumentation that measures temperature, pressure, level and flow.	Footage and Introduction of Oliver Conger, Managing Director and Owner of British Rototherm Ltd. standing in between an ASTUTE 2020 banner and a British Rototherm poster related to the project. Shot of the world's first steam pressure gauge that was manufactured by British Rototherm in 1847 and the patent for this steam pressure gauge.
00:00:46	I heard about ASTUTE 2020 from an organisation called MAKE UK and they connected us with the right people within ASTUTE. They have got very strong technical understanding especially around computational fluid dynamics which was crucial for	Footage of Oliver Conger describing how he heard about ASTUTE 2020 and why he contacted the operation. Footage of Oliver Conger and an ASTUTE 2020 project officer in conversation as they walk across the factory

	what we were trying to study as part of this program.	floor.
00:01:09	The problem we were trying to solve is what is the noise emitted through one of our restriction orifice assemblies. As pressure flows through one of these devices and it drops it creates noise and the noise can also lead to vibration and potential problems along the rest of the pipeline. There is nothing available for restriction orifice plates so we wanted to come up with a proven model that we could then take to designing a better product.	Footage of Oliver Conger describing British Rototherm's manufacturing challenge. Shot of the pressure reducer moving onto footage of the British Rototherm poster that is related to the project with ASTUTE 2020 and other British Rototherm promotional materials that are lining the wall of the factory.
00:01:37	So from ASTUTE's side, they came in we broke down the problem into a number of different steps and together with our own team we put together a project plan to be able to come up with a model and be able to test that for the restriction orifice plates.	Footage of Oliver Conger describing the initial steps taken by the ASTUTE 2020 team and the British Rototherm team. Footage of a piece of equipment used in the test rig. Footage of two British Rototherm staff on the factory floor moving onto one of the staff member's using

		machinery.
00:01:57	And so what ASTUTE ended up doing, they helped us prove the model and then that model was tested through some pretty sophisticated CFD software. The orifice plates that we were selling now were designed on a proven formula for noise which nobody in the world has and from that we were able to go to our customers and prove to them that our design was able to meet the noise requirements.	Footage of Oliver Conger describing the support that the ASTUTE 2020 team provided during the project including their technical expertise and the results of the collaboration. Footage of British Rototherm staff on the factory floor. Footage of computational fluid dynamics (CFD) simulations. Footage of some of the instrumentation and parts that British Rototherm manufacture. Footage of the different types of machinery in the British Rototherm factory.
00:02:29	What this has led to is a number of significant projects, we have been able to secure worldwide and also resulted in us being able to employ a further 5 people in	Footage of Oliver Conger describing the further benefits that has resulted from the collaboration with ASTUTE 2020.

	the organisation and invest in additional machinery to really put us as a leader in this field.	Footage of equipment in the factory. Footage of British Rototherm staff at their work stations assembling parts.
00:02:47	So the reason for working with ASTUTE 2020, they have a significant amount of technical capability, they have access to programs, and software and resources that a company such as Rototherm doesn't have. They can help to provide confidence to take something that you wouldn't have gone forward with.	Footage of Oliver Conger explaining the reasons for working with ASTUTE 2020. Shot of British Rototherm banner in the factory. Footage of instrumentation that is manufactured by British Rototherm.
00:03:07	So since we've completed the project, we've been working with the M2A program so we have a student here for four years. We've got a proven model for calculation of noise through one of our devices and that has led us now to bid on projects and it's resulted in us winning the largest ever order for this particular product line for Vietnam so it's been a super success	Footage of Oliver Conger describing what has happened since the project including the positive outcomes of the collaboration. Footage of a wall which displays pictures of British Rototherm staff and pictures that show before and after photos of the factory to depict how it has improved during the course of the company's 'Lean journey'.

		A shot of the Manufacturing in Action Award Finalist plaque that British Rototherm received for being nominated as one of the finalists of the Manufacturing in Action Award by the Manufacturer MX Awards in partnership with the Institution of Mechanical Engineers
00.03.29	Instrumental music	ASTUTE 2020 partner logos – Aberystwyth University, Cardiff University, Swansea University, University of South Wales and University of Wales Trinity Saint David. ASTUTE 2020 and the European Regional Development Fund Logo. ASTUTE 2020 website link.