Request for instrument manufacturer with expertise in hyperspectral imaging to develop a handheld device for measuring the graded maturity of cheese.

Summary

Profile type	Company's country	POD reference
Technology request	**United Kingdom**	**TRGB20250613015**
Profile status	Type of partnership	Targeted countries
PUBLISHED	**Commercial agreement with technical assistance**	**• World**
Contact Person	Term of validity	Last update
Enrico FRANZIN	**16 Jun 2025** **16 Jun 2026**	**16 Jun 2025**

General Information

Short summary

A scientific research organisation and a local dairy producer in Northern Ireland are seeking partners to assist in developing a handheld scanning device for assessing cheese maturity. Hyperspectral imaging-based algorithms have already been developed to measure the graded maturity of cheese, with a patent currently pending. The next phase of this research involves creating practical instrumentation for use by the dairy producer, with potential for broader technology licensing opportunities.

Full description

AFBI is the research organisation negotiating on behalf of their client, Dale Farm.
This UK research organisation has a strong track record of collaboration within the agri-food sector, particularly with a local dairy producer. Together, they have developed hyperspectral imaging-based algorithms capable of non-destructively measuring the graded maturity of cheese- even through vacuum packaging. A patent is currently pending for this innovation.
They are now seeking an instrument manufacturer to help take this project to the next stage: the development of a handheld device for use in factory settings. This device would incorporate the existing algorithms to measure maturity in real time, monitor the maturation process, and detect specific chemical compounds indicative of different maturity stages.

The current cheese grading process is manual, destructive, labour-intensive, and costly. It also presents significant financial risk, with up to two years between raw milk purchase and product sale. A non-destructive, automated solution offers the opportunity to increase efficiency, improve consistency, and reduce time to market.
Once developed and deployed within the partner dairy, there is significant potential for the technology to be licensed to other cheese manufacturers, creating wider industry impact.

Main Features of the requested technology

• The requested technology will build upon the algorithms that have been previously developed at a proof-of-concept stage.
• The technology will be able to measure graded maturity of cheese as well as measure specific compounds related to the cheese maturation process.
• The technology should be “handheld” and suitable for use in a “cheese manufacturing” environment.
• The raw data recorded by the instrument should be accessible to the cheese manufacturer for use in other “big data” projects.

Advantages and innovations

Hyperspectral imaging-based algorithms have been developed to measure the graded maturity of Cheddar cheese, representing what is believed to be a first-of-its-kind innovation. These algorithms enable real-time, non-destructive testing of cheese, even through vacuum packaging. A patent application has been filed for the technology. The integration of these algorithms into a scanning device is expected to provide a significant competitive advantage to the associated producer and could potentially create lucrative licensing opportunities for others in the industry. This technology will enable real-time monitoring of cheese throughout the maturation process.

Technical specification or expertise sought

• The instrument manufacturer must have a proven record in developing handheld scanning devices.
• Expertise in hyperspectral imaging is required.
• The instrument manufacturer will develop the handheld device using the algorithms we have previously developed.
• The instrument must have the capability of operating in the Short Wave Infrared spectral region (900-2400nm).
• The raw data collected by the handheld scanning device must be accessible for integration into other data-driven projects.
• The instrument manufacturer will collaborate with the research organisation to use the developed algorithms to manufacture the scanning devices. and ensure Quality Assurance of raw data.

Stage of development

Under development

Sustainable Development goals

• Goal 9: Industry, Innovation and Infrastructure

IPR Status

IPR Notes

Partner Sought

Expected role of the partner

The instrument manufacturer is expected to have a strong track record in developing handheld scanning devices and will work with the research organisation to integrate existing algorithms into a functional product. They will also collaborate with the research team and a dairy producer to test and refine the device for optimal performance in a real-world setting.

This technology request seeks a suitable instrument provider to build on the recent success of a proof-of-concept project. They have shown that hyperspectral imaging algorithms can measure the graded maturity of cheese. They currently lack the technical expertise to integrate these algorithms into a functional device or instrument therefore seeking assistance to support the next stage of development. It is envisaged that an international partner will be identified and will use the developed algorithms to produce an instrument capable of the rapid and non-destructive assessment of cheese maturity.

Type of partnership

Commercial agreement with technical assistance

Type and size of the partner

- **R&D Institution**

Dissemination

Technology keywords

- **08001005 - Food Technology**
- **08001004 - Food Processing**

Market keywords

- **09004008 - Other manufacturing (not elsewhere classified)**
- **08003007 - Other industrial equipment and machinery**
- **09005 - Agriculture, Forestry, Fishing, Animal Husbandry & Related Products**

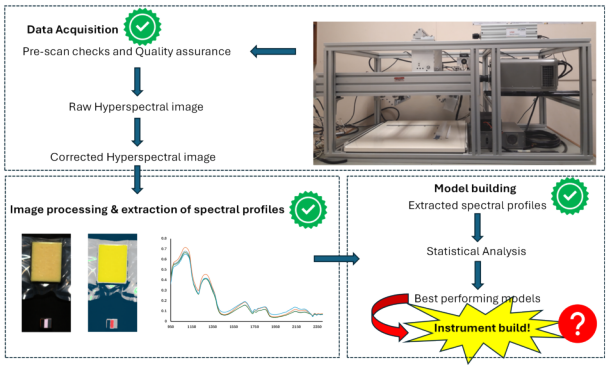
Targeted countries

- **World**

Sector groups involved

Media

Images



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