



WHY

SmartSatCRC is a new cooperative research centre, applying over \$200m of combined investment into problems in Australia that can be solved from space. We are helping SmartSatCRC prioritise their research investments, and are focused on identifying value-generating problems in the agriculture segment.

WHAT

A 1.5 hr online workshop with relevant stakeholders where, with your help, we will validate key problems linked to the optimisation of Australia's supply chains in Agriculture (see next pages) and identify the value of solving them.

OUTCOME

Prioritised opportunities for the use of space-enabled technologies to achieve greater efficiencies in agriculture supply chains, with a clear value proposition which can be used by SmartSatCRC and their partners to identify problems suitable for applied research investment.

WHEN

Join us for this online workshop [date to be determined]

OPTIMISING SUPPLY CHAINS IN AUSTRALIA'S AGRICULTURAL SECTOR USING INSIGHTS FROM SPACE-TECHNOLOGIES

The SmartSat CRC has a \$30 million budget for R&D and our work is advising them on research priorities across industry where space-enabled technologies can help to solve key industry challenges so that they allocate funds to the right problems. Agriculture is one of industries of interest. Involvement in this work means you can have input into the research portfolio and be well placed in future research funding rounds.

STARTER QUESTION	PROBLEM CONTEXT	SPACE-ENABLED TECHNOLOGIES AS TOOLS
<p>I want to know how much pasture I have for my sheep right now and whether that amount is increasing or decreasing.</p>	<p>Pasture growth rate needs to be greater than the rate of consumption by grazing animals to avoid reducing growth rates and the value of livestock.</p>	<p>Normalised Difference Vegetation Index (NDVI) augmented with newer EO and IoT data to give better estimates.</p>
<p>How can I better tell the health of my stock spread across wide area in remote locations?</p>	<p>Capture of remote, high quality data can improve ROI through benefits to business administration and reduction of labour costs.</p>	<p>Low-cost space-based comms for integration and utilisation of spatial and temporal data to optimise monitoring, intervention and feeding management .</p>
<p>I want more accurate predictions of when the best time will be to seed and harvest to make my operations more profitable.</p>	<p>Automated quality control and traceability of fresh produce during production will assist producers in setting and defending prices for their produce in the marketplace as the agricultural value chain becomes more automated and integrated.</p>	<p>Earth observation can monitor the production environment and activities, while quality control can be automated through IoT.</p>
<p>I need to detect crop damage from pests and disease at the earliest possible stage.</p>	<p>The importance of detecting plant disease early is highlighted by annual crop losses due to viruses and fungal attacks being as high as 30 percent.</p>	<p>Hyperspectral imagery can identify specific signals of crop health impacts while in-situ IoT instrumentation can monitor conditions and provide alerts.</p>
<p>I need to understand if I am still growing the optimal crop in each paddock based on both environmental and market conditions.</p>	<p>As conditions change between, and within, seasons producers need to be able to optimise planning and management of land use to ensure the best financial, environmental and sustainability returns.</p>	<p>Earth observation contributes to improved seasonal forecasting. Real-time connection between growing information and market needs can provide a future focused predictive capability.</p>
<p>I need to estimate how much of my product I can produce over the next 3 months based on current information.</p>	<p>The ability to be able to track how the current season is unfolding compared to previous seasons provides the opportunity to estimate expected production.</p>	<p>Earth observation contributes to improved seasonal forecasting. When linked to growth models in combination with IoT production can be estimated.</p>
<p>How can I optimise stock movement between properties in different regions to maximise growth?</p>	<p>Kilograms of beef produced per hectare is a significant driver of profit for a business. Data can underpin decisions to move stock over large distances to optimise body mass and health prior to market.</p>	<p>Earth observation can be used to map feed availability between regions and acts as an input into optimisation models.</p>