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Planter Task Controller

What is ISOBUS? What is Universal Terminal (Virtual Terminal)? What is Task Controller?

What is ISOBUS?

- A standardized communication protocol for devices to communicate in the Ag Industry.
  - Devices are for instance: Terminals, Joysticks, Switchboxes, Electronic Control Units and Tractor Electronic Control Units.
  - ISOBUS also standardizes physical components such as connectors and cables.

What is Universal Terminal (Virtual Terminal)?

- The Universal Terminal displays the User Interface of the Electronic Control Unit (ECU).
  - Replaces the implement specific display, and provides the capability of operating an implement with any terminal.
  - The Universal Terminal can be used to display and operate multiple implements at the same time.
  - The Universal Terminal does not know what it displays. There is no direct link between the data displayed in the Universal Terminal and the Ag Leader map screen.
  - Does not log data, has not AutoSwath functionality, and is not capable of running prescriptions.

What is Task Controller?

- Task Controller is the link between the ECU and the Ag Leader maps screen.
  - Task Controller is used for Section Control (AutoSwath), Rate Control, running prescriptions, and Data Logging.
  - Ag Leader can control up to 8 products at the same time via Task Controller.

The diagram below shows the roll of Universal Terminal and Task Controller in ISOBUS.
What is ISOBUS? What is Universal Terminal (Virtual Terminal)? What is Task Controller?
Q: What unlocks do I need for planter Task Controller functionality?

**Question:** What unlocks do I need for planter Task Controller functionality?

**Answer:** Specific unlocks required for Task Controller will vary based on the display being used and the implement to be controlled. For instance, to control a Kinze 4900 planter the display will require a Multi-product unlock. Assuming the ISOBUS ECU supports Task Controller functionality; features include section control, data logging and variable rate control.

**Unlocks by display**

- The InCommand 1200 and Ag Leader® Integra displays come with the Universal Terminal and AutoSwath unlock standard, so it is ready to run Task Controller. However, certain ECUs will also require the use of a Multiple Product unlock. As always, it is still needed for growers wanting to apply or plant multiple products and/or varieties.

- The InCommand 800 and Versa displays will need the Universal Terminal unlock, AutoSwath unlock and the Multiple Product unlock, depending on the implement to be controlled or the products to be logged, applied.

- The Compass display does support ISOBUS through a Universal Terminal unlock but does not support Task Controller functionality. Universal Terminal supports multiple ECUs without the need for a Multiple Product unlock.

**Unlocks by planter ECU**

- The Kinze 4900 planter ECU will require the Universal Terminal, AutoSwath and Multiple Product unlocks.

- The John Deere planter ECU will require the Universal Terminal and AutoSwath unlocks, though the Multiple Product unlock will be needed if the grower wants split planter, fertilizer or pesticide application functionality. If the John Deere planter has 2 or more hydraulic drives, a Multiple Product unlock will be required, regardless if only one variety will be logged.

- Other planter ECUs: Other 3rd party planter ECUs will require the Universal Terminal and AutoSwath unlocks. A Multiple Product unlock will be needed if the grower wants split planter, fertilizer or pesticide application functionality. If the Device Description of the planter ECU is defined as 2 or more hydraulic drives or “meters,” a Multiple Product unlock will be required, regardless if only one variety will be logged. To learn more about Device Description and Task Controller setup please reference the Task Controller Display Configuration Guides (https://dealer.agleader.com/kbp/index.php?View=entry&EntryID=1453)

Q: What unlocks do I need for planter Task Controller functionality?
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Kinze 4900 Task Controller runscreen

Content last reviewed on: 2/2/17
Reviewed by: JW
Q: Will I need a switchbox for Task Controller functionality?

**Question:** Will I need a switchbox for Task Controller functionality?

**Answer:** It will depend on if the particular ECU will support an external switchbox or not. Some will and others will transmit user input through the virtual terminal. For Spring 2014, supported Task Controller planters cannot utilize switchbox input.

More commonly used is the switchbox for external input with product application ECUs. Ag Leader does not maintain a list of ECUs that support switchbox input.

The Ag Leader switchbox will work with Task Controller. To enable this functionality, mark the auxiliary module support setting. Then, set the switch functionality in auxiliary input.
ISOBUS - Task Controller FAQs

What new features will Task Controller provide my Ag Leader display, when hooked to an ISOBUS implement? The following features, assuming the ECU supports task controller: AutoSwath control, Data Logging, and Variable Rate control.

Is an unlock required to enable Task Controller on an Ag Leader display? Yes. However, the InCommand 1200 comes standard with Universal Terminal and Task Controller functionality. The InCommand 800 requires an ISOBUS unlock, which enables both Universal Terminal and Task Controller. The Compass requires an ISOBUS unlock to enable Universal Terminal, Compass does not support Task Controller.

What machines are supported with Task Controller? Multi-channel and single channel ISOBUS sprayers, spreaders, planters and seeders are supported with Task Controller. Ag Leader maintains a list of known compatible systems.

What version of Task Controller is supported? Task Controller Version 2

The ISOBUS system I use now uses tasks/jobs, will Ag Leader’s task controller support them? The InCommand 1200, InCommand 800 and Compass displays can be set to use Events or Ag Leader's usual Grower/Farm/Field management.

The ISOBUS system I use now imports and exports XML files. Will Ag Leader’s task controller support them? Ag Leader does not support Task Controller Basic or ISOBUS File Server. Ag Leader InCommand display can export logged data in XML format and in AgData format, the InCommand can import AgSetup format and for instance SHP.

If I connect to an ISOBUS implement with Ag Leader's task controller, will it auto-populate any data within the display? Yes. InCommand’s Load and Go feature grabs information from implement’s ECU to build the display configuration.

Content last reviewed on: 10/20/16
Reviewed by: SSW
Q: Is the Jump Start Switch functionality compatible with task controller?

**Question:** Is the Jump Start Switch compatible with planter task controller?

**Answer:** No. The Jump Start Switch is compatible with the Hydraulic and Steeper Seed Rate Modules only.
Rate Change Look Ahead Setting

Description

Rate Change Look-Ahead compensates for any latency in the control system and is designed to provide control valves additional time to fully adjust and achieve its new rate when transitioning between flow rates during variable rate application. Typical setting range is 0-1 second.

This setting changed name from Controller Time Delay in version 6.3 Ag Leader® Integra and Versa firmware to better communicate what the setting actually does.

This setting can be thought of as a "look ahead" value when using a variable rate prescription. The display will send the signal to change rates before hitting a transition line so that the applied rate is correct when crossing into the new management zone.

Location

This setting is found within the Configuration Setup menu under the Equipment Settings button:

![Configuration Setup](image-url)
Where Used

This setting is available on planting and application configurations, including serial control and ISO, in which variable rate applications are possible. Modules supported are; hydraulic seed rate, stepper seed rate, liquid product control, 3&5 channel granular, spreader stepper, strip till, app rate module (serial control), and any ISO module capable of rate control through task controller.

Practical Application

This value can be increased in 1 second intervals if transitioning between different management zones in a prescription and the controller is taking too long to achieve a target rate. A key thing to remember is this parameter should only need changed if controller settings are known to be proper and working well for holding a single target rate.

Most hydraulic based rate controllers have the ability to change very quickly and don't often need this setting adjusted. This setting is most commonly used when running liquid product control at higher speeds and servo/PWM based controllers have less time to react.

Example

The below picture shows a good example of how Rate Change Look-Ahead setting functions. Note the difference in map between the top, middle, and bottom sections in which the look-ahead setting had different values. The higher the setting was, the sooner the rate changed between zones creating a "castle effect" with the map. Similar to AutoSwath seeing a castle effect doesn't always correlate to improper control. Some form of in-field verification or "dig test" would be needed to confirm proper function.
Rate Change Look Ahead Setting
Getting Vehicle Speed Information to your ISOBUS Implement

The ISOBUS implement's ECU speed settings may have multiple speed source options to choose from. Depending on the type of speed source required by the implement, this will dictate which ISO speed source setting you select.

ISOBUS Speed Settings Defined

**Broadcast Display Speed (ISO GBSD)**
Checking this box allows speed source currently being utilized by the display to be broadcast over the ISOBUS to the implement.

**Broadcast GPS (J1939)**
Checking this box allows GPS data being supplied by the GPS receiver to be broadcast over the ISOBUS to the implement ECU. The J1939 broadcast is sending the GPS speed data via J1939 format. The "GPS" speed setting within the implement ECU will need to be able to read the J1939 format for this to work. Not all ECUs will have this ability, contact manufacturer for details.

As an example for utilizing the J1939 format, the Kinze 4900 electric drive planter's ECU will detect ISO GBSD speed but requires the J1939 speed source for turn compensation planter functionality.

How to Verify ISOBUS is Receiving Speed
Check the Virtual Terminal to ensure the vehicle speed reading is present and is accurate.
Additional Considerations
If an implement's ISO harness is plugged into an ISO ready tractor and also being run through the vehicle's communication bus, the vehicle may also be broadcasting a speed over the ISOBUS. It's important to consider what speed sources and how many speed sources are being sent to the implement ECU.