

Amazone GPS-ScenarioControl:

Boundary-pushing app



GPS-ScenarioControl takes inaccuracies out of boundary spreading by controlling the machine path and timing the on-off control of the sliders. The broadcaster uses the app for switching automatically to a different boundary spreading mode. Photos: Berning (1), Tovornik



GPS-ScenarioControl is a new feature of the Amazone AmaTron Twin app which records and retrieves field paths and on/off control commands with GNSS accuracy for easier navigation and boundary spreading.

Boundary spreading is a challenge for operators, because they must ensure not a single granule is spread outside the boundary by operating the spreader in the correct boundary spreading mode. Especially occasional drivers who are not knowledgeable enough to apply the fertiliser to statutory requirements or to yield-opti-

mising strategies will find this stressful. And sometimes poor visibility makes it difficult to choose the proper border spreading mode or the best strategy of navigating the field. GPS-ScenarioControl cracks these problems by automating boundary spreading and assisting operators in navigating the field in the most crop-friendly way.

GPS-ScenarioControl is an extra feature of the AmaTron Twin app from Amazone and is available at a one-off charge of 100 euros (prices without VAT). The AmaTron Twin app for Android or iOS devices can be downloaded free of charge from Google Play or the Apple App Store. The app reproduces the field view of the Amazone AmaTron 4 terminal on the user

tablet after the connection to the terminal is made via Wi-Fi (profil 8/2020) and after the terminal is enabled for the feature (575 euros).

Pathways and on-off control

As GPS-ScenarioControl can be used on any type of machine for recording the tracks and the appropriate direction of travel, it can be mounted on a broadcaster but also on a sprayer to do the record-



The Amazone app on the tablet communicates with the AmaTron 4 terminal. The photo shows the activated boundary spreading feature.

ing. When spreading fertiliser with an Amazone ZA-TS or ZG-TS model, the GPS-ScenarioControl records the 'on-off switch' positions along the boundary plus the commands that retrieve the various boundary spreading modes and enable/disable HeadlandControl.

In order to record the tracks and the 'on-off switch' positions, the tractor must have a GNSS receiver and receive a correction signal. Egnos is fine for the appropriate positioning accuracy.

Replaying a scenario

The AmaTron 4 records the travel path of the machine together with the necessary direction of travel, the start and

finish points as well as the 'on-off switch' positions and assigns commands to these. This scenario can then be replayed during the next application. Once the scenario is enabled, the app indicates the starting position, the order in which the tramlines should be navigated and how the headland turns should be executed. All this is visualised on the screen by arrows and different colour schemes that indicate treated and untreated areas.

KEEPING IT BRIEF

The GPS-ScenarioControl is an extension for the AmaTron Twin APP.

The system must link up to an AmaTron 4 terminal and a GNSS receiver.

It records bouts travelled and 'on-off switch' points with positioning accuracy and displays and replays them next time the machine enters the field.



The on-off control points can be nudged or deleted and new points can be added.

GPS-ScenarioControl defines the bouts, the direction of travel and the type of headland turn.

The operator merely has to switch the spreading discs on and off, possibly activate SectionControl, open the sliders and close them at the end of the application. GPS-ScenarioControl transmits the boundary spreading and HeadlandControl commands to the terminal and from here to the job processor on the broadcaster which executes the commands. This means that the various border spreading modes and the HeadlandControl feature are enabled/disabled automatically without any interference from the operator. When the tractor approaches a specific field position that requires switching, the broadcaster is commanded to select the specific mode or enable/disable HeadlandControl.

Automatic recording

The concept behind the app is that a skilled operator or the farm manager carries out a specific field application, executing all commands manually and recording them with GPS-ScenarioControl. The recording is done automatically after the recording button is hit. The button appears in the AmaTron Twin app when the tablet connects to the AmaTron 4 terminal and after the spreading discs are activated. GPS-ScenarioControl then records any tractor manoeuvre - including reversing into corners and making headland turns.

After the driver opens the granule outlet and starts spreading, the field view starts displaying the treated bouts in green. During the recording, the operator controls the spreader as usual, enabling for example boundary spreading in the bout along the boundary to avoid spreading a neighbouring field.

GPS-ScenarioControl programs the position as an 'on-off switch' point where boundary spreading is enabled next time. Then, when approaching the headland, the driver could activate HeadlandControl and select a different boundary



spreading mode to avoid spraying a road that runs next to the headland. For spreading along ditches, the ditch spreading mode can be selected.

Each of these switch points is flagged out in the field view of the software. When you tap these marks, a menu pops up listing various symbols that reflect the spreading functions that are available for this particular field position. The driver can modify the functions in retrospect and also during the automatic replay. Also, the individual marks can be deleted or nudged.

After the boundary circuit has been completed, the boundary spreading feature is turned off while GPS-ScenarioControl continues recording the paths and the direction of travel.

Replaying or recording?

When the recording is completed, the driver switches off the spreading discs. This stops all recording. Then, the field view displays a hachured field, which means that there is now a scenario available for this particular field. When this field is entered the next time, the tablet prompts that there is a scenario available for this particular field and asks if the scenario should be enabled and replayed or if recording should be resumed.

The same question is asked after pausing spreading and recording for refilling the fertiliser hopper.

When recording or replaying is resumed after refilling the hopper, the screen displays orange coloured bouts which indicate treated areas and a marker that indicates the point where spreading was stopped and should be resumed. If the tractor passed a specific 'on-off switch' position while the scenario was being



GPS-ScenarioControl requires a tablet with the AmaTron Twin app. The tablet can be mounted to the AmaTron 4 terminal with the RAM bracket that Amazone offers for 205 euros.



replayed and before pausing spreading, the system will re-enable this function when the spreading discs are switched back on.

Other points worth mentioning:

- » The driver must navigate the tractor in the preset direction of travel. It is not possible to change the direction of travel, because in that case the program would be executed the wrong way round.
- » It is possible to record multiple scenarios for the same field and the next software update will feature appropriate options, says Amazone.
- » Neither field names nor boundaries need to be entered to the AmaTron 4 terminal when this is used for GPS-ScenarioControl recording.
- » Amazone offers an optional RAM bracket for mounting the tablet to the AmaTron 4 terminal.

» It is not possible as yet to plan pathways and 'on-off switch' positions on the office PC.

Summary:

GPS-ScenarioControl from Amazone assists operators and avoids errors when selecting a boundary spreading mode and also prevents travelling the same track twice. After an application is recorded it can be replayed at the touch of a button, switching the various boundary spreading modes automatically and GNSS-controlled. This way, the app gives farm managers peace of mind when their drivers apply fertiliser along ditches and roads as it ensures they will comply with regulations or yield-optimising schemes. This is a very intriguing solution for occasional drivers or managers who have their apprentice do the spreading, for example.

Another advantage is that by following default pathways you can also spread at dusk and yet not damage crops plants. This useful add-on for the AmaTron Twin app costs 100 euros. The route display feature is available for all machines that are controlled by AmaTron 4. The automated command replay feature is available for ZA-TS and ZG-TS spreaders only.

Anja Böhrnsen

Translated into English by trans-agrar



As soon as the tractor is in the field, the hachured area indicates that a scenario is available for this field.