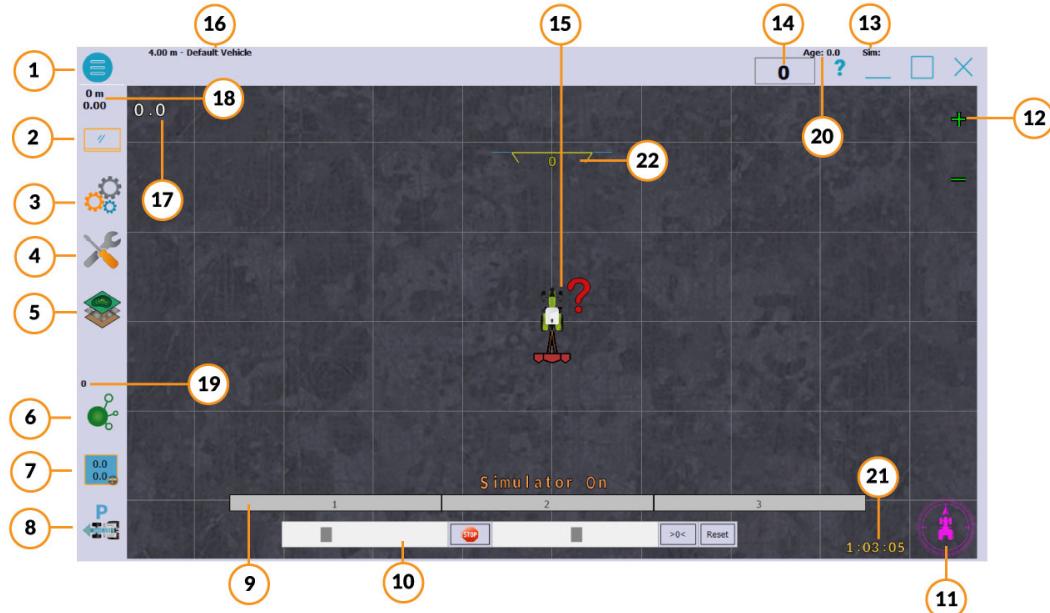




VERSION 5.7

AgOPENGPS
MANUAL

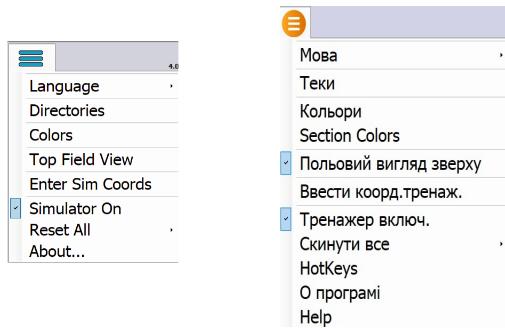
AgOpenGPS Головний екран



1. - Головне меню
2. - Параметри екрану
3. - Загальна конфігурація
- 4.- Утиліти
5. - Меню поля
6. - Ярлик для AgIO
7. - Конфігурація керма
8. - Режим рульового управління
9. - Відображення секцій
10. - Керування симулятором
11. - Індикатор керма
12. - Кнопки масштабування
13. - Режим GPS
14. - Спідометр
15. - Скидання напрямку віртуальної кнопки (перезапуск напрямку вперед при подвійному натисканні)
16. - Інформація про поле та транспортний засіб
17. - Інформація про курс
18. - Лічильник відстані
19. - Повідомлення про помилки
20. - Інформація про давність RTK-повідомлень
21. - Годинник
22. - Відображення крену

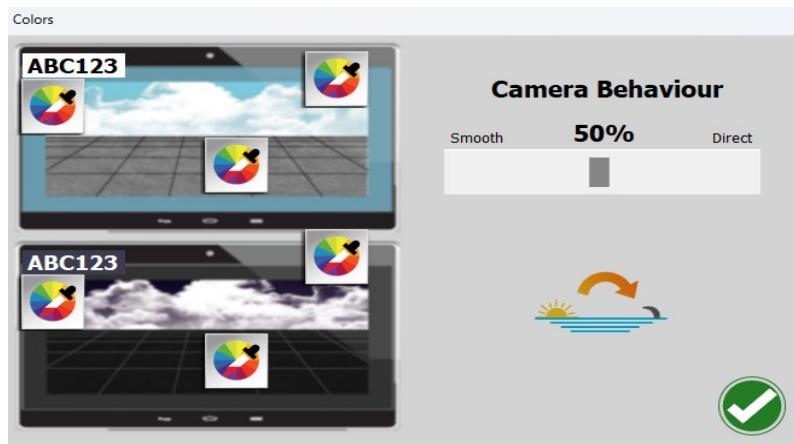
1.- Головне меню

AgOpenGps загальна конфігурація.



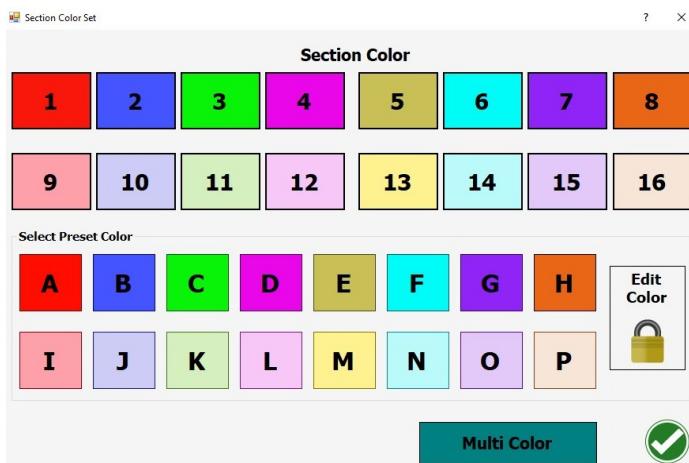
Мова: Доступні переклади для AgOpenGPS

Папки: Теки, що використовуються в AgOpenGPS



Кольори: Налаштування кольорів для всього

Ви можете налаштовувати кольори для денної та нічної версії, колір поля, літер та вікон.



Кольори секцій: Налаштування кольорів секцій

Ви можете налаштовувати кольори для секцій.

Вигляд поля зверху:



Невелике вікно вигляду поля з висоти пташиного польоту.

Ввести коорд. тренаж.: Можливість зміни координат місця старту тренажера.

Тренажер включ.: Увімкнути/вимкнути тренажер.

Скинути все: Скидання всіх налаштувань до значень за замовчуванням.

Гарячі клавіші: Налаштування гарячих клавіш клавіатури.

Про програму: Інформація про AgOpenGPS, команду розробників та ліцензію

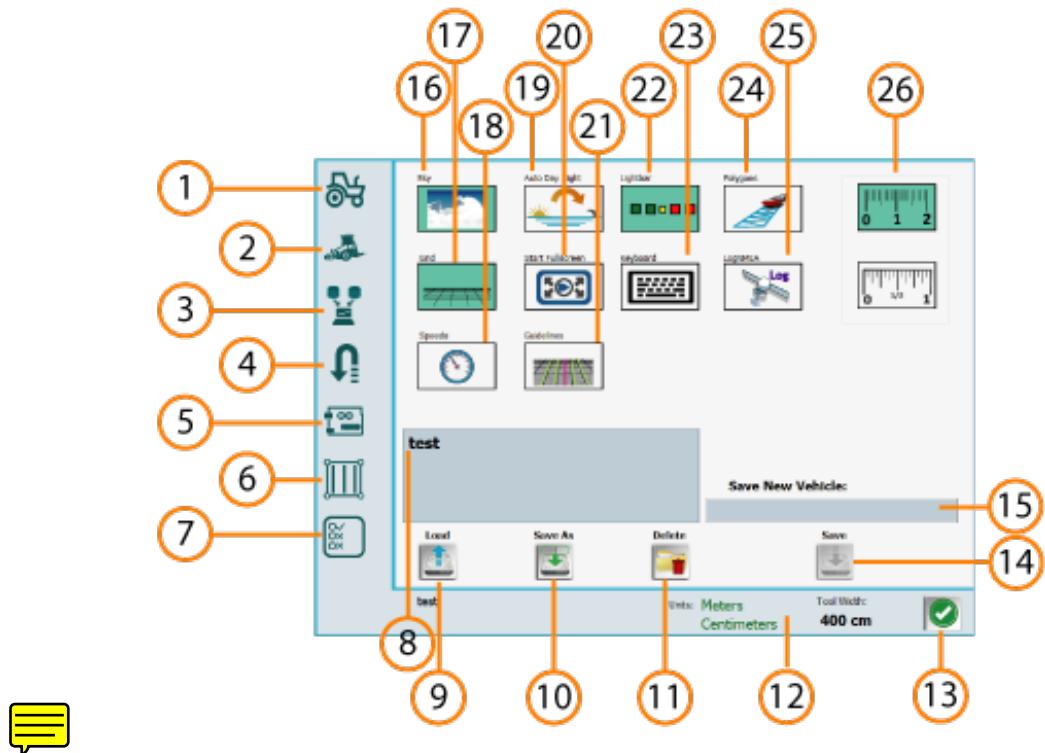
Допомога: Корисні посилання де отримати допомогу.

2.- Параметри екрана



1	Вигляд нахилу вниз	6	Вигляд нахилу вгору
2	2D вигляд	7	3D вигляд
3	2D вид на північ	8	3D вид на північ
4	Зменшити	9	Збільшити
5	День/ніч	10	Монітор продуктивності
11	Зменшення яскравості	12	Збільшення яскравості

3.-General Configuration

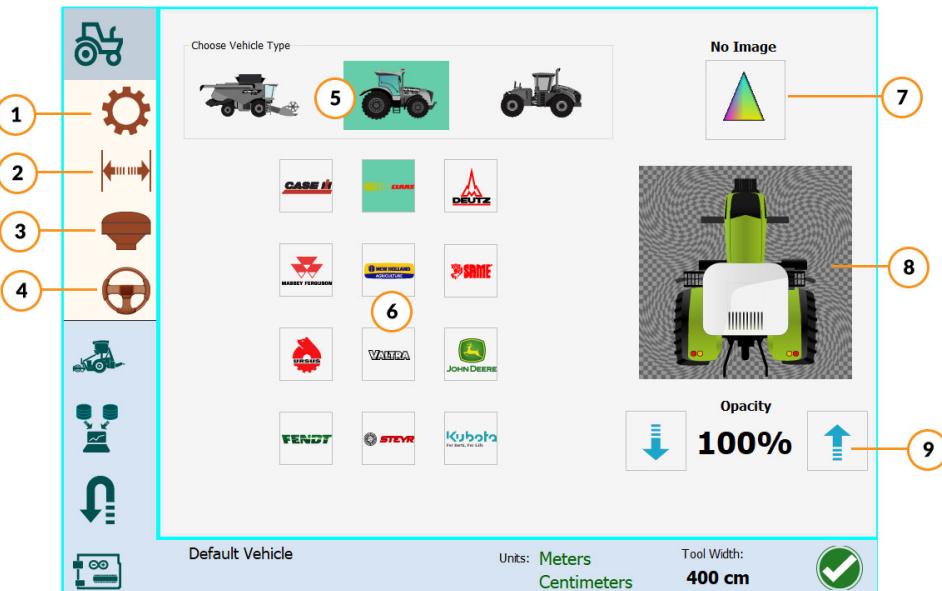


SUBMENU		LOAD/SAVE	EXTRAMENU
1	Vehicle configuration	8	Saved vehicles
2	Implement configuration	9	View grid in field
3	Sources configuration	10	View speedometer
4	Uturn configuration	11	Day/Night auto cycle
5	Arduino configuration	12	Start full screen
6	Trams configuration	13	View extra guides
7	Icons configuration	14	View lightbar
		15	Open keyboard
			Polygons in mapping
			Log NMEA
			Units selection (cm/in)

3.1.- Vehicle configuration

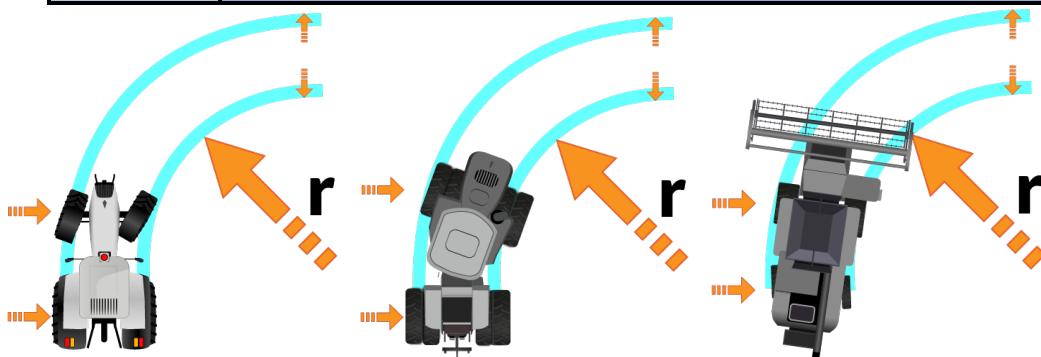
3.1.1	Vehicle type
3.1.2	Vehicle dimensions
3.1.3	Antenna Configuration
3.1.4	Steer options

3.1.1.- Vehicle type	
5	Vehicle type
6	Brand
7	Triangle image icon
8	Preview box
9	Opacity



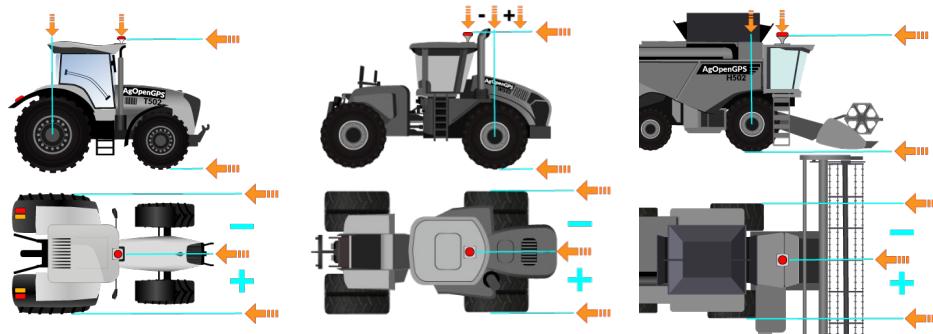
3.1.2.- Vehicle dimensions

Wheel Base	Horizontal distance between centres of the front and rear wheels in cm/in
Track	Distance measured across an axle from the centre line of one tyre tread to the centre line of the opposite tyre tread in cm/in
Radius	Minimum turn radius in cm/in



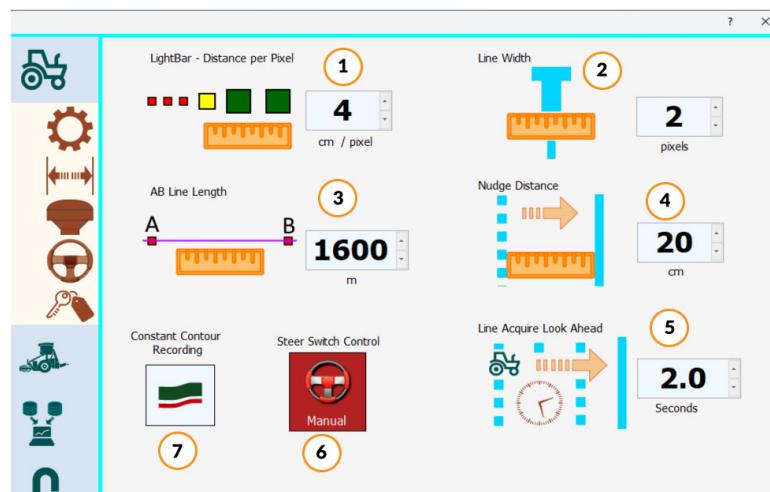
3.1.3.- Antenna configuration

Antenna distance	Antenna distance to pivot point in cm/in
Antenna height	Distance between antenna and ground in cm/in
Offset antenna	Distance between the antenna and the central axis of the vehicle, positive to the right, negative to the left in cm/in

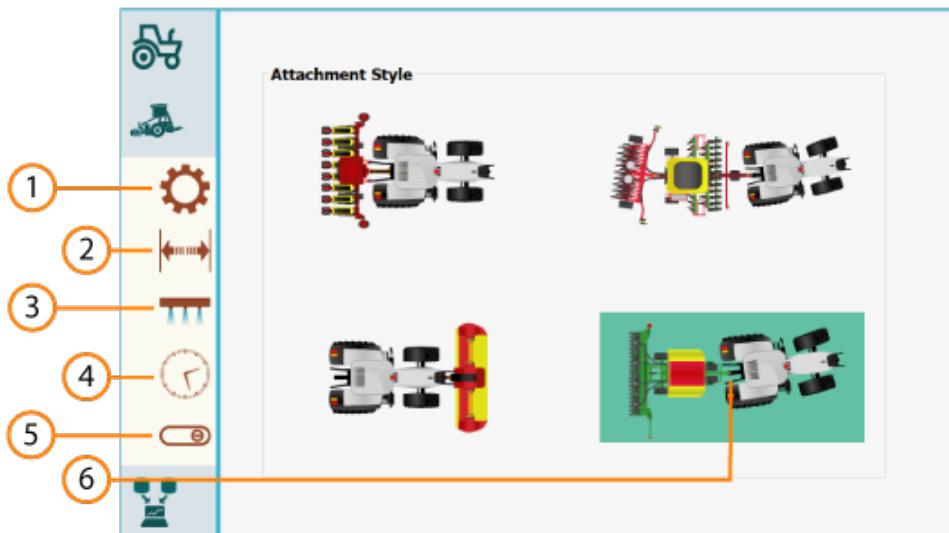


3.1.4.- Steer options

1	Lightbar	Distance in cm/in for each frame
2	Lines width	In pixels
3	AB Line Distance	In meters distance A to B
4	Snap Distance	Default distance to snap
5	Button to let the software button follow the steer switch/button status	Default snap distance in cm/in
6	Look Ahead to line acquire	Time in sec
7	Constant Contour Recording	



3.2.- Implement configuration



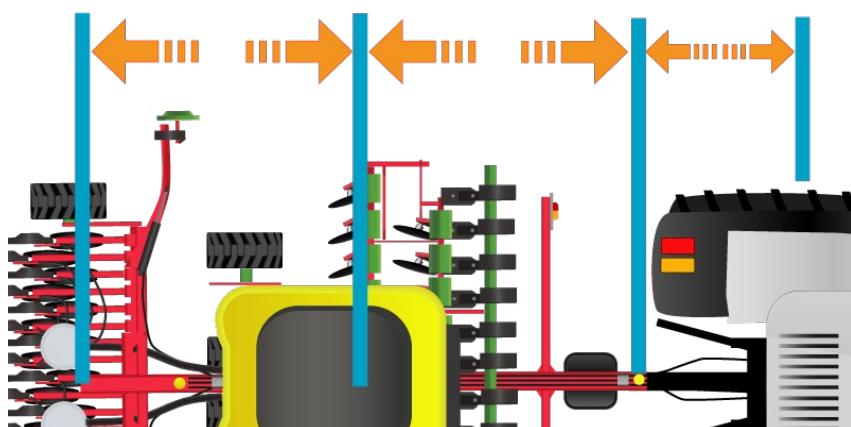
3.2.1	Attachment style
3.2.2	Attachment dimensions
3.2.3	Attachment sections
3.2.4	Attachment options
3.2.5	Work switch
3.2.6	Attachment selected

3.2.1.- Attachment style
Rear fix
Doubled traile
Front
Trailed

1

3.2.2.- Attachment dimensions

Distance from tractor pivot point to attachment,
different distances for each type of attachment



3.2.3.-Attachment sections	
1	Length for each section in cm/in
2	Speed below which sections are deactivated
3	Length of default section, if you change number of sections, all new sections have this length, in cm/in for each section
4	% Coverage all sections
5	Number of sections, and total length for attachment, in cm/in

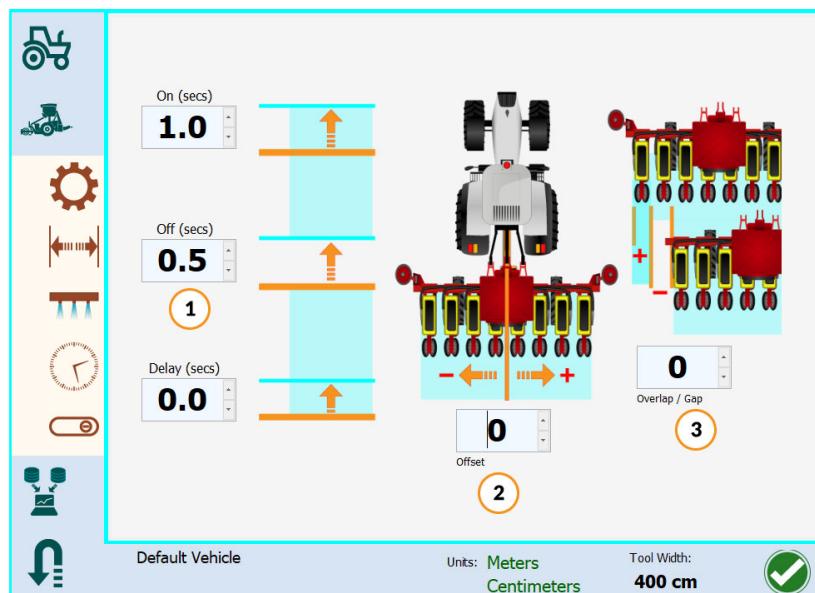


The screenshot shows the 'Attachment sections' configuration in Agisoft Metashape. The interface includes:

- A preview area at the top showing 16 sections labeled 1 through 8, with section 1 highlighted.
- Input fields for:
 - Section Width: 200
 - # Of Sections: 8
 - % Coverage: 100
 - Total Width: 1600 cm (checked)
- Buttons for:
 - Default Vehicle: kmh 0.5
 - Units: Meters/centimeters
- Numbered callouts (1-5) pointing to specific controls:
 - Callout 1: Default Vehicle button
 - Callout 2: Section Width input field
 - Callout 3: % Coverage input field
 - Callout 4: Units dropdown
 - Callout 5: Total Width input field

3.2.4.-Attachment options

1	Time in seconds for activate disactivate, and delay
2	<p>Offset attachment</p> <p>Distance between the central axis of attachment and the central axis of the vehicle, positive to the right, negative to the left in cm/in</p>
3	<p>Overlap/Gap</p> <p>Overlap distance in positive (cm/in) Gap distance in negative (cm/in)</p>



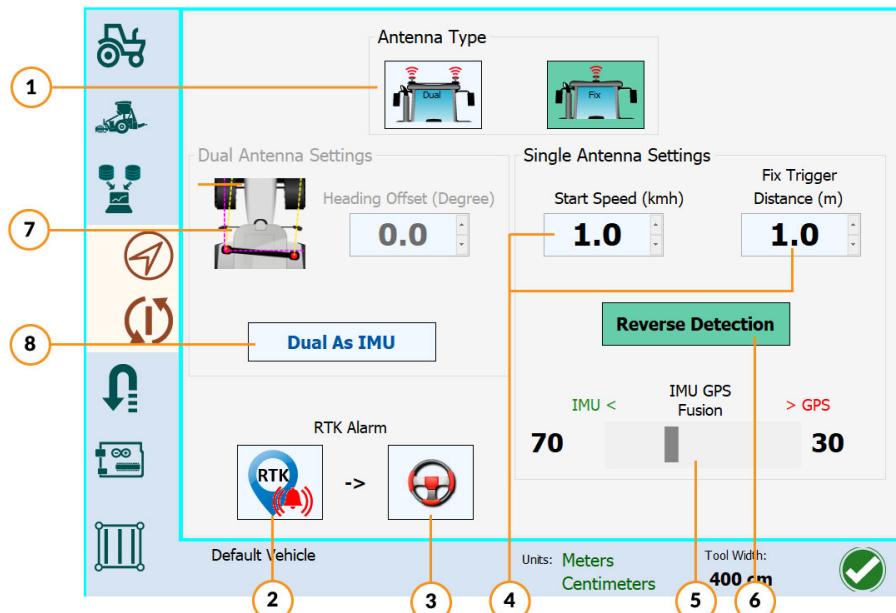
3.2.5.- Work Switch

Work Switch	Steer Switch
Enable Work Switch	Enable Steer Switch
Work switch enable manual sections	Steer switch enable manual sections
Work switch enable auto sections	Steer switch enable auto sections
How switch works	

The image shows a software interface for managing agricultural machinery settings. On the left, a vertical toolbar contains icons for a tractor, a loader, a gear, double arrows, rain, a circular arrow, and a switch. The main area is divided into two sections: 'Work Switch' and 'Steer Switch'. The 'Work Switch' section includes a red 'Work Switch' button, a 'Manual Sections' button with a hand icon, an 'Auto Sections' button with a grid icon, and a row of four small icons representing different switch configurations. The 'Steer Switch' section includes a steering wheel icon labeled 'Steer Switch', a 'Manual Sections' button with a hand icon, and an 'Auto Sections' button with a grid icon.

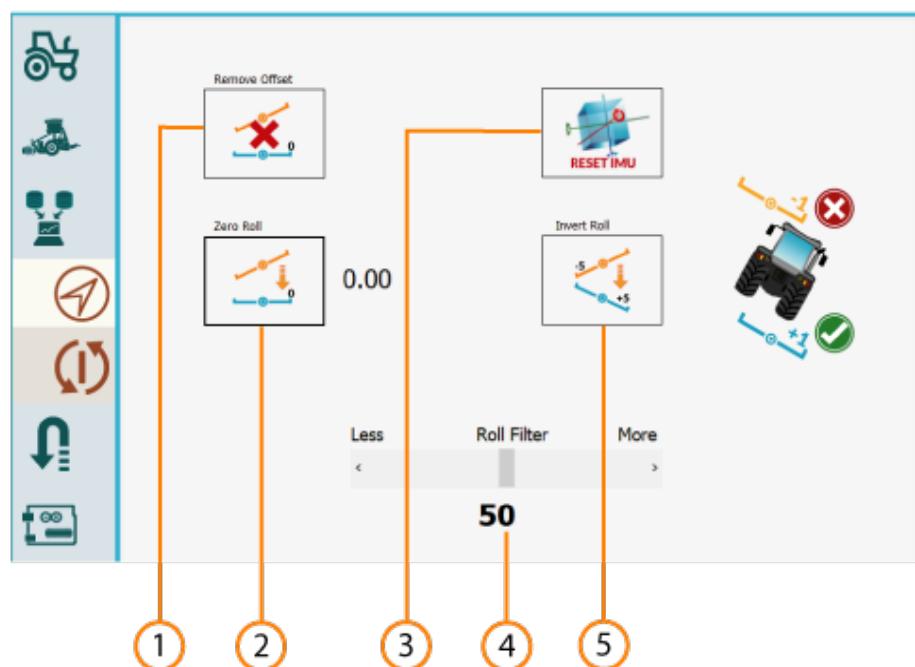
3.3.- Sources configuration

3.3.1.- Heading		
1	Antenna Type	Single: Fix or VTG Dual
2	RTK alarm	Screen message when RTK lost
3	Kill Autosteer	When RTK lost, program deactivate autosteer
4	Single antenna settings	Fix trigger distance: Distance in meters to start recognizing movement Start speed: Minimum speed to start recognizing movement Forward: Distance to start recognizing forward movement Reverse: Distance to start recognizing reverse movement
5	Heading filter	Fusion heading filter, more GPS or more IMU
6	Reverse detection	Program detect reverse movement
7	Dual Heading offset	Offset in degrees for dual heading. The slight variation between what the antennas say are 90 degrees but may be slightly off - like 89.6. So the offset would be 0.4
8	Dual as IMU	Enable for using the heading from the dual antenna as an IMU. Will only work with FixToFix



3.3.2.- Roll

1	Remove offset	
2	Roll zero	
3	Reset IMU	Reset IMU to default settings
4	Roll Filter	For PANDA messages set value in 0 or 1
5	Invert Roll	Positive for tilt to the right, negative for tilt to the left



3.4.-Uturn configuration

1	U-Turn Radius
2	Distance Uturn legs
3	Distance to boundary
4	Smooth entry and exit

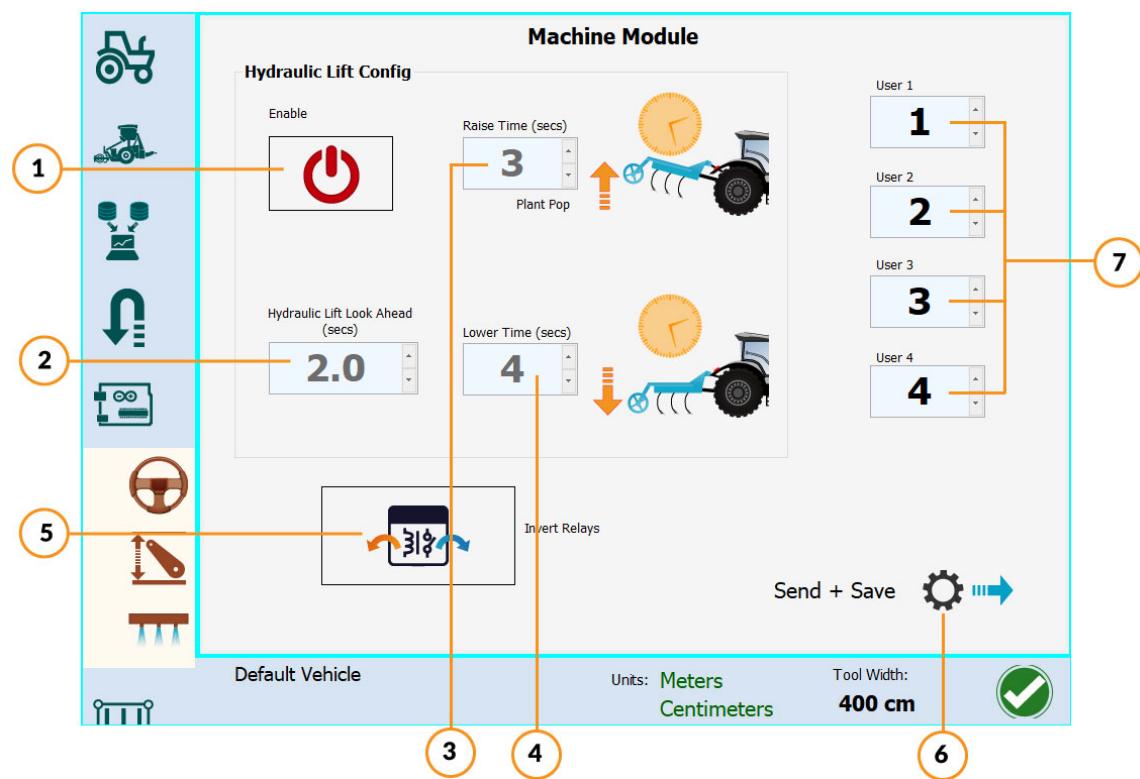
The screenshot shows a software interface for agricultural vehicle path planning. On the left, there is a vertical toolbar with icons for a tractor, a harvester, a sprayer, a planter, a tractor with a trailer, and a stack of boxes.

The main area displays four configuration parameters:

- 1**: A diagram of a U-turn with a radius labeled **R**. Below it is a value **8.10** with a unit dropdown set to **m**.
- 2**: A diagram of a U-turn with a distance to a boundary labeled **?**. Below it is a value **20 m** with a unit dropdown set to **m**. To the right, there is a hint: **Hint: Set extension length to 2 or 3x Radius**.
- 3**: A diagram of a U-turn with a distance to a boundary labeled **?**. Below it is a value **2.00** with a unit dropdown set to **m**.
- 4**: A diagram of a U-turn with a smooth entry and exit. Below it is a value **14** with a unit dropdown set to **m**. To the right, there is a hint: **Hint: Set Smoothing to 3 or 4x Radius**.

3.5.2- Arduino lift configuration

1	Enable lift control	
2	Hydraulic lift look ahead	Time in seconds that the program looks forward to operate hydraulic lift
3	Raise time	Time in seconds that the raise of the hydraulic lift advances
4	Lower time	Time in seconds that the lowering of the hydraulic lift advances
5	Invert relays	
6	Send and save	<u>Mandatory for any change in this menu</u>
7	User Pins	These are 4 user generated values that the machine module can use. They are just bytes sent



3.5.3- Sections configuration

The screenshot shows a configuration interface for sections. On the left is a vertical sidebar with icons for vehicle, loader, sprayer, harvester, irrigation, steering, and a gear. The main area contains a grid of 24 pin assignments. The first three columns are labeled Pin 1 through Pin 4, and the next two columns are labeled Pin 5 through Pin 10, Pin 11 through Pin 15, Pin 16 through Pin 20, and Pin 21 through Pin 24. Each pin assignment is a dropdown menu. Below the grid are two circular arrows (left and right) and a 'Send + Save' button with a gear icon.

Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
Section 1	Section 2	Section 3	-	-
Pin 6	Pin 7	Pin 8	Pin 9	Pin 10
-	-	-	-	-
Pin 11	Pin 12	Pin 13	Pin 14	Pin 15
-	-	-	-	-
Pin 16	Pin 17	Pin 18	Pin 19	Pin 20
-	-	-	-	-
Pin 21	Pin 22	Pin 23	Pin 24	-
-	-	-	-	-

Pin configuration for each section

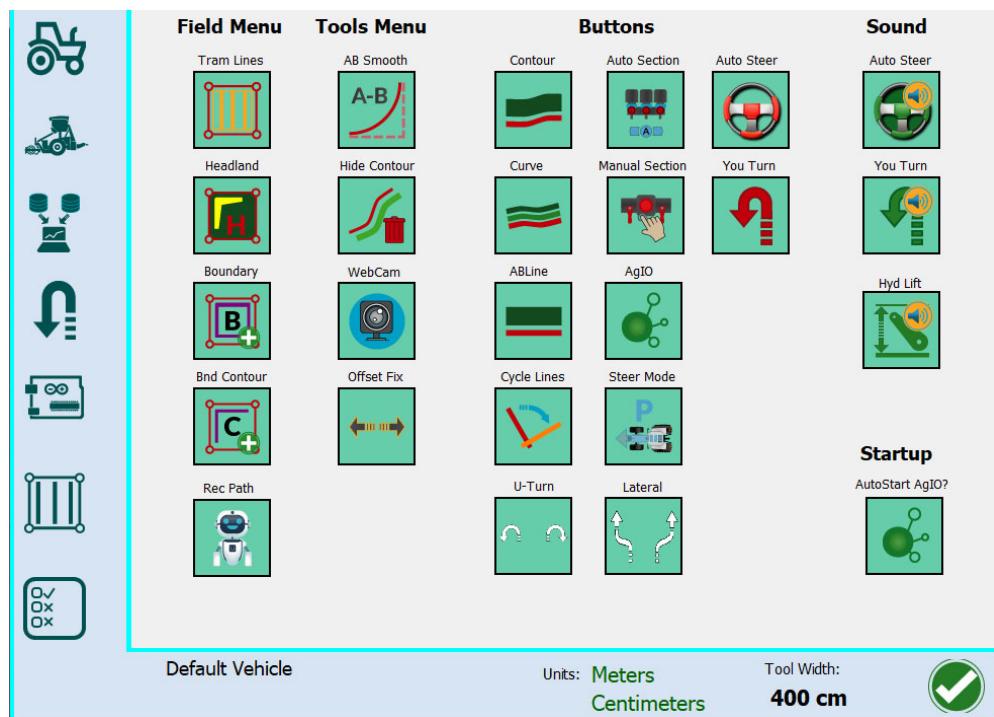
3.6.- Tram Lines configuration

1	Enable Tram line	
2	Tram width	Distance between two tram lines in cm/in

The screenshot shows a configuration interface for tram lines. On the left is a vertical sidebar with icons for vehicle, loader, sprayer, harvester, irrigation, steering, and a gear. The main area features a diagram of a vehicle with two parallel lines and a red sensor, labeled with a circled '1'. Below it is a horizontal double-headed arrow with orange end caps, labeled with a circled '2'. To the right of the arrow is a numerical input field with '2400' and a dropdown menu for units ('cm'). At the bottom are buttons for 'Default Vehicle', 'Units: Meters Centimeters', 'Tool Width: 400 cm', and a checked checkbox.

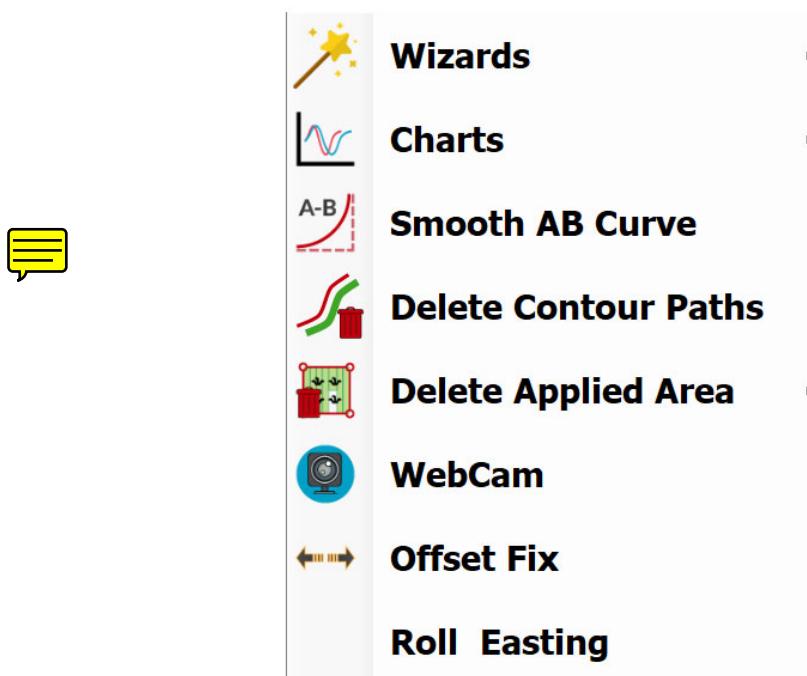
Default Vehicle Units: Meters Centimeters Tool Width: 400 cm

3.7.- Icons configuration

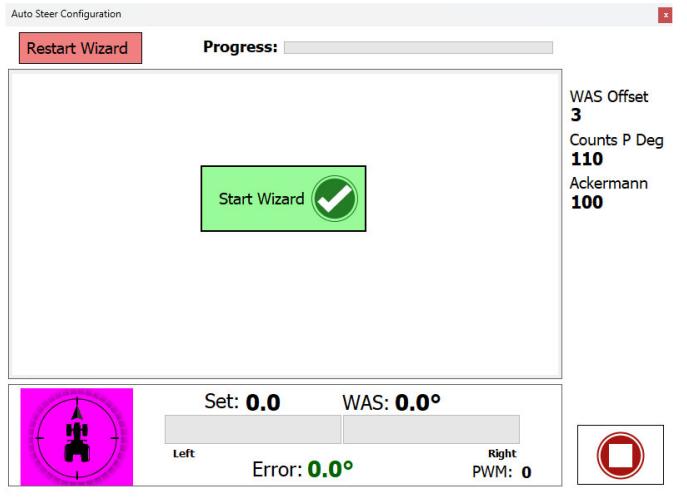


Show or hide icons and alert sound

4.-Utilities



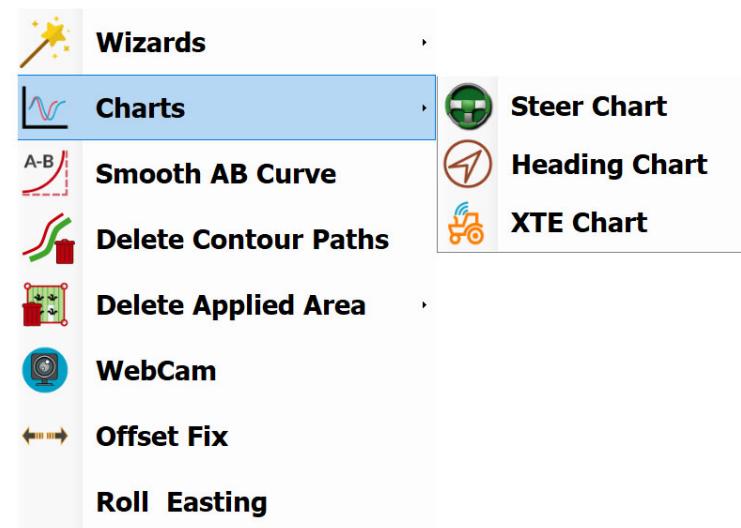
4.1-Wizards (Steer wizard)



Steer Setup Wizard, follow the steps to the end.

4.2.- Charts

Steering chart	Comparative graph of the real heading with the calculated one
Heading Chart	Comparative graph of the fix2fix and IMU heading
XTE Chart	Graph that shows the XTE (cross track error), and compares the ideal line with the actual route





4.3.- Smooth AB Curve

- | | |
|---|--------------------------------------------------------------------|
| 1 | Activate AB Curve |
| 2 | Use arrows to modify AB Curve |
| 3 | Save only for now (this use), Or save to file, or cancel operation |



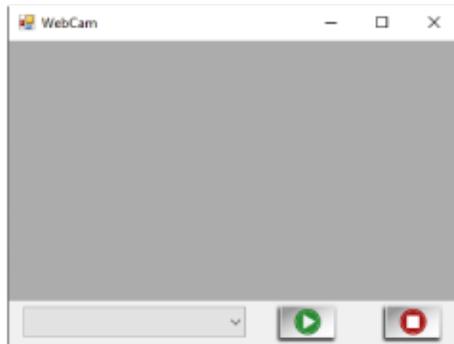
4.4.- Delete contour paths

- | | |
|---|----------------------------------|
| 1 | Delete all contour paths created |
|---|----------------------------------|



4.5.- Delete applied area

- | | |
|---|-------------------------------------------------------------|
| 1 | Delete all sections and contours (cleans all painted areas) |
|---|-------------------------------------------------------------|



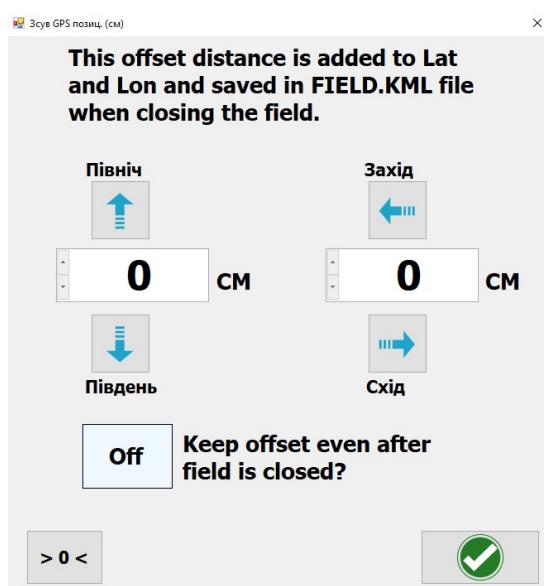
4.6.- Webcam

- | | |
|---|---------------------------------------|
| 1 | Small window for webcam output signal |
|---|---------------------------------------|



4.7.- Offset fix

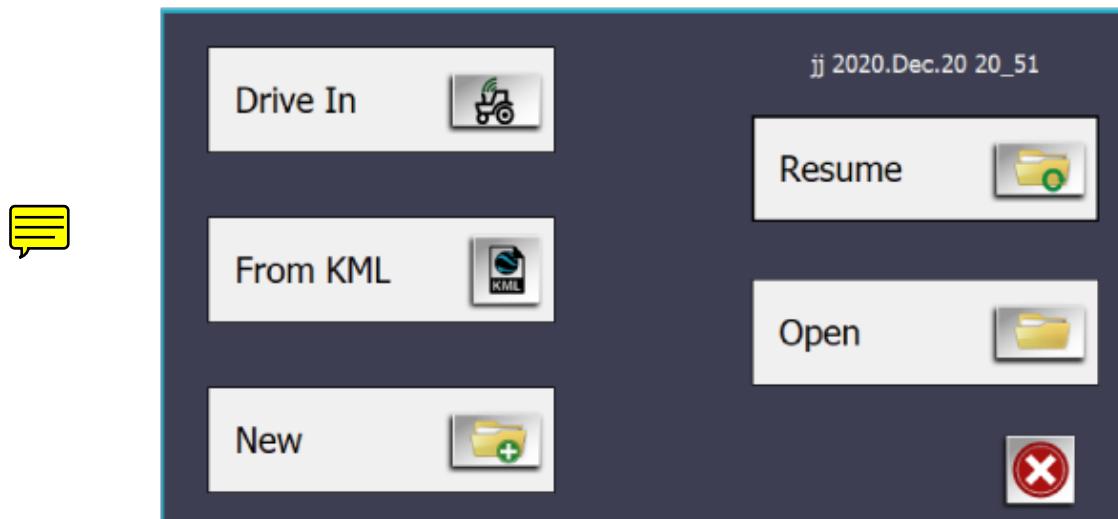
- | | |
|---|-----------------------------|
| 1 | Shift GPS Position in cm/in |
| 2 | North/South |
| 3 | West/East |
| 4 | Reset |



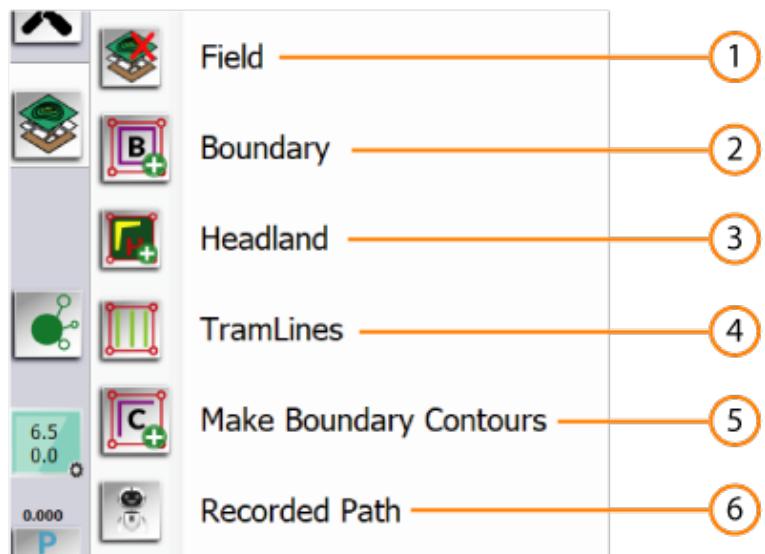
5.1.a- Field menu (none field opened)

This window appears if you don't have any field opened

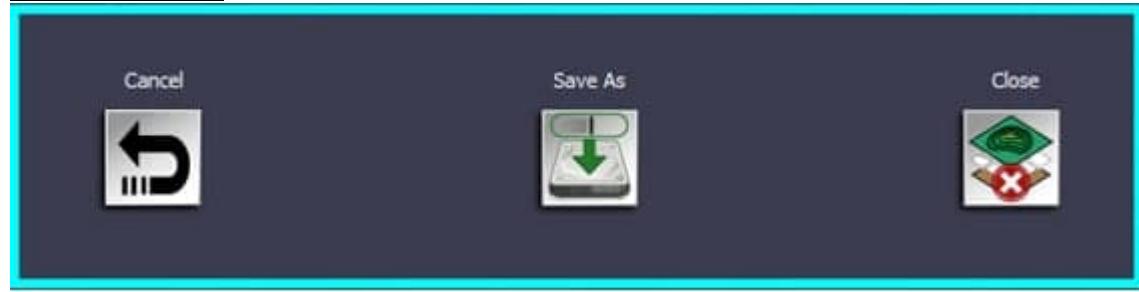
1	Drive in	Drive to create new field
2	From KML	Import KML file created with Google Earth
3	New	Create a new field file, add name, date...
4	Resume	Resume work in last field opened (last field displayed in top right corner)
5	Open	Open field previously saved
6	Cancel	



5.1.b.- Field Menu

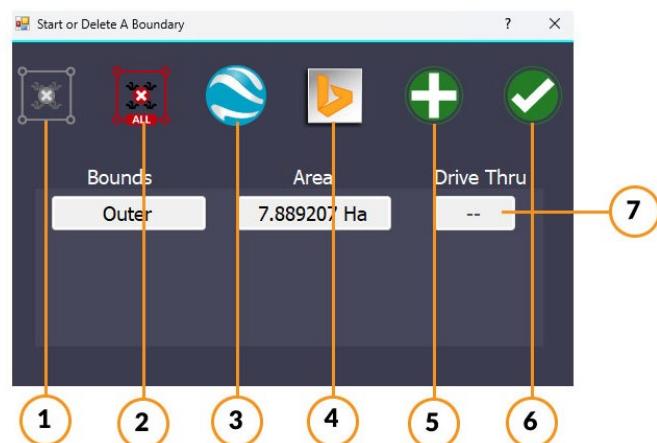


5.1.1.- Field Close



5.1.2- Boundary

1	Delete selected boundary	
2	Delete all boundary list	
3	Import Google Earth file	Import KML file created with Google Earth
4	Import from Bing Maps App	
5	Add new boundary	You can add new boundary driving in or with KML file
6	Done	
7	Boundary List	



5.1.3.a- Headland (make)

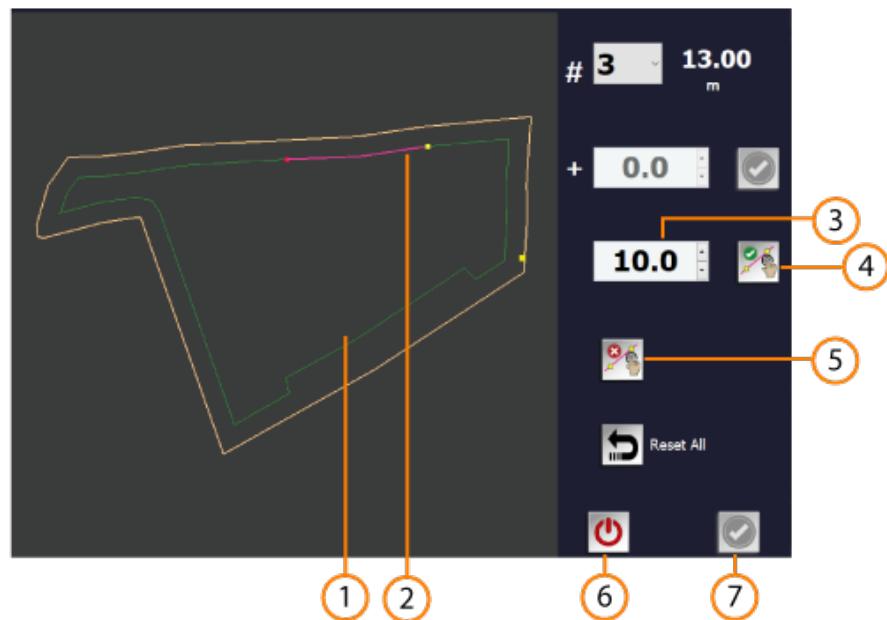
1	Field Map	
2	Boundary	
3	Headland	
4	Number of passes	Headland distance calculated by the number of passes multiplied by the width of the implement
5	Extra Width	You can add extra width in metres
6	Reset all	
7	Cancel	
8	Done	



When the headland is active new buttons appear at the bottom edge of the window, see point 32

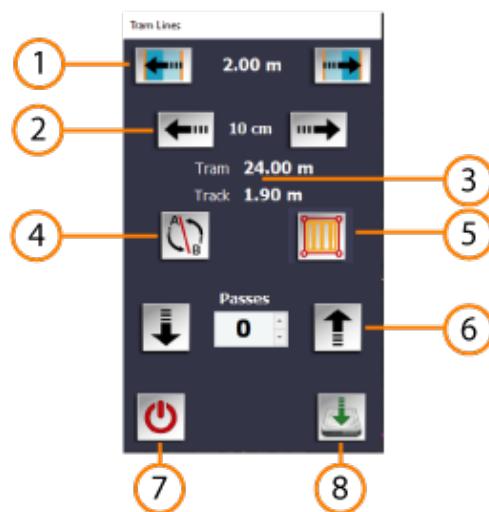
5.1.3.b- Headland (modification)

1	Modified Headland	
2	Headland selected ready to modification	Selection by touching two points in map
3	Distance	Distance in meters for modification, positive for inward direction, negative for outward direction
4	Validate modification	
5	Cancel Modification	
6	Cancel	
7	Done	

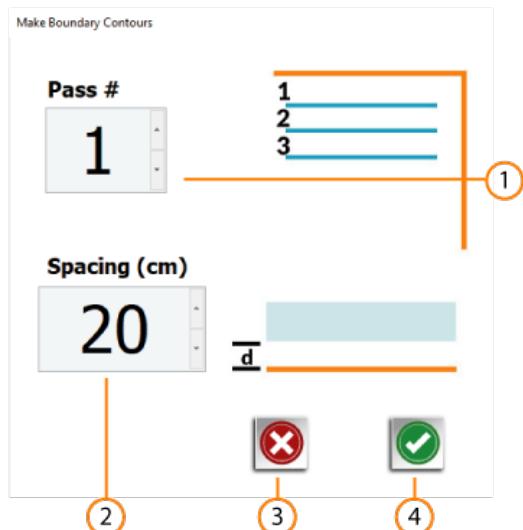


5.1.4-Tramlines

1	Arrows for modifying the starting line of the tram lines	Distance in meters, half of attachment
2	Arrows for modifying the starting line of the tram lines	Distance in cm
3	Tram lines information	Tram spacing configurated in General configuration of Tram lines (3.6) Track configurated in General configuration of vehicle (3.1.2)
4	Change direction the starting line	
5	Type of tram lines	Only tram lines All tram lines with headland Only headland tram lines Cancel tram lines
6	Number of passes	
7	Shut Off	Turn Off Tramlines
8	Done	



5.1.5.-Boundary Contours		
1	Number of passes	
2	Spacing	Distance in cm between boundary and first pass
3	Cancel	
4	Done	

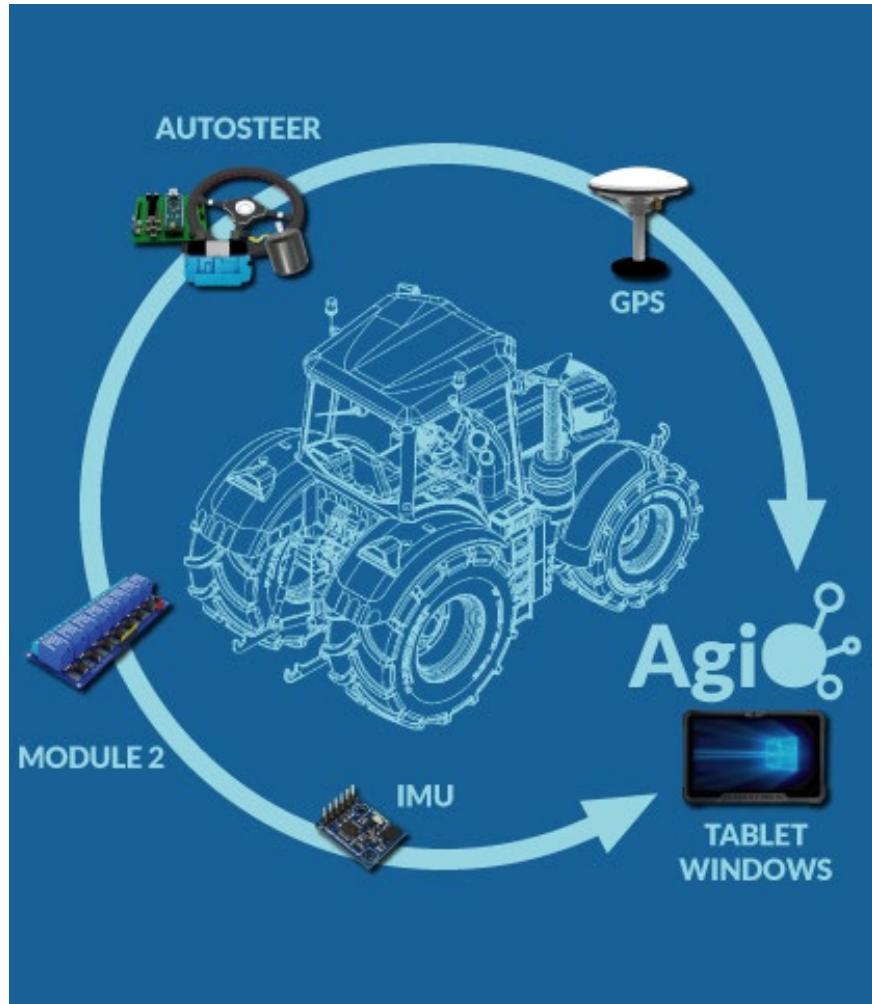


5.1.6.-Recorded Path		
1	Play	
2	Style	Three styles: Start at beginning, Closest point, Last stopped position
2	REC	Once pressed, it changes to stop, to be able to stop recording
3	Cancel	



This function allows you to register any route to execute it

6.- AgIO

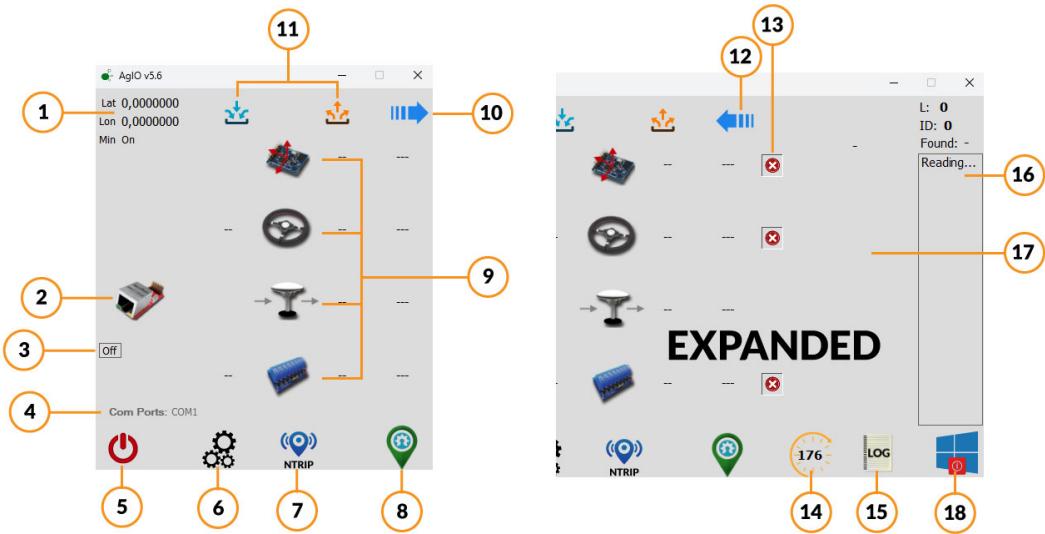


Program that controls communications between AgOpenGPS and all components:

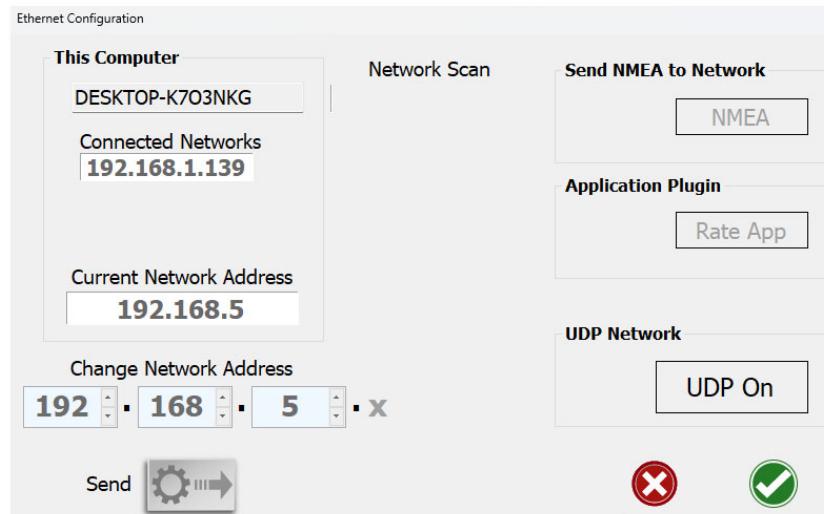
Tablet with AgOpenGPS
GPS
AutoSteer (PCB, DC Motor, Hydraulic valves)
Machine modules

6.-AgIO

1	Coordinates information	
2	UDP icon	It is also a virtual button that opens a window that opens a window for UDP configuration, when UDP it's active the icon turns green
3	UDP network	Shows network status, OFF or IP of active network
4	Ports information	Active COM ports
5	Turn Off	
6	Extra configuration	
7	NTRIP configuration	
8	AgOpenGPS icon	Shows AgOpenGPS or start it if it's closed
9	Component icons	It is also a virtual button that opens a window for the configuration and connection of the components
10	Expand arrow	Expands window to show more information
11	In/Out information for each component	It is also a virtual button that opens a window with information on GPS, speed, height, satellites, ...
12	Close Arrow	Close expanded window
13	Hide/Show component	
14	Timer	Countdown to hide expanded window
15	Log	Creates a log file named zAgIO_log.txt with all NMEA messages on program folder
16	NTRIP info box	Shows info about NTRIP, type of NMEA messages, length and number of each message
17	Extra UDP info	Only available if you are using UDP, show info about relays, CDP, WAS,...
18	Shutdown	Button to shutdown Windows



6.2.-UDP configuration

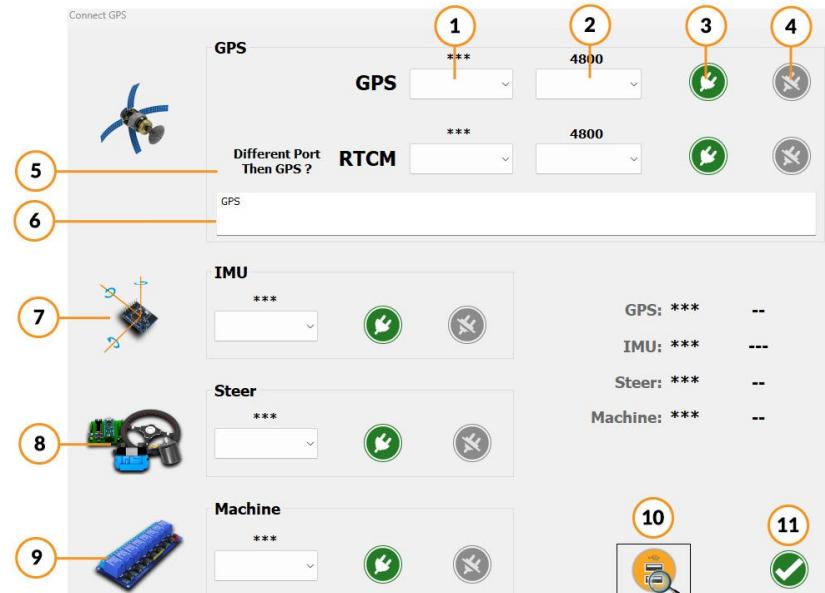


Press the UDP On button and Send to enable UDP, accepting configuration restarts AgIO

Standard sketches use 192.168.5 network address

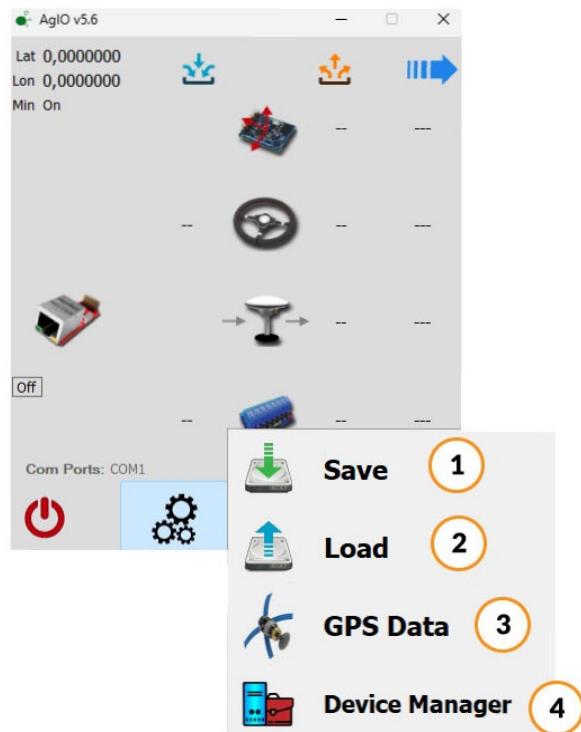
6.9-AgIO Components

1	GPS Port	
2	Bit Rate connection	
3	Connect	
4	Disconnect	
5	RTCM Port	If you use a different port for RTCM messages
6	GPS Information	Box shows information about GPS messages (NMEA string)
7	IMU Module Port	If you connect IMU directly to PCB don't have port for IMU
8	Steer Port	
9	Machine Module Port	
10	Scan Ports	
11	Done	



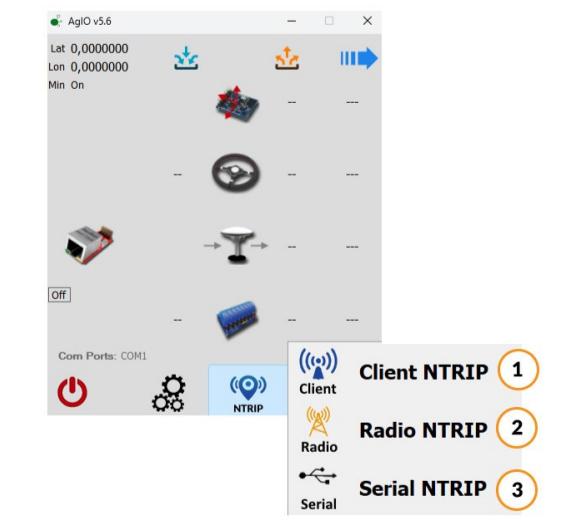
6.6.-AgIO Extra configuration

1	Save	Save AgIO config
2	Load	Load AgIO config
3	GPS Data	Shows GPS information, same as related in point 6. (11)
4	Device Manager	Opens Windows Device Manager



6.7.-AgIO NTRIP

1	Client NTRIP	NTRIP in same port of GPS
2	Radio NTRIP	NTRIP using Radio Link
3	Serial NTRIP	NTRIP using Serial Port



6.7.1.1-NTRIP Configuration (Source tab)

1	Source Tab	
2	Position Tab	
3	Advanced Tab	
4	Host	
5	IP address	
6	Broadcaster	Enter Caster URL or IP
7	Confirm IP	
8	Caster IP	When confirmed shows IP
9	Username	Enter your Username for caster, (o) shows password
10	Password	Enter your password for caster, (o) shows password
11	Get source table	Shows all mounts available from your caster
12	Mount	Shows selected mount
13	Caster port	
14	NTRIP On	Turns on/off NTRIP
15	Cancel	
16	Done	

NTRIP Client Settings

Source Position Advanced

Host: DESKTOP-K703NKG Username: (o) 9

IP: 192.168.1.139 Password: (o) 10

5

6 Enter Broadcaster URL or IP: www.rtk2go.com Mount: IGS01 Get Source Table 11 12

7 Confirm IP Caster Port: 2101 Default: 2101 13

8 IP: 69.75.31.235

NTRIP On 14 15 16

6.7.1.2.-NTRIP configuration (Position tab)

1	Latitude for manual fix	
2	Longitude for manual fix	
3	Select fix type	Use GPS Fix Use Manual Fix
4	Latitude current GPS fix	
5	Longitude current GPS fix	
6	Send GPS fix to Manual fix	
7	Serial	Send to GPS using Serial (USB. RS232)
8	UDP	Send to GPS using UDP
9	UDP Port	Port number for UDP
10	GGA interval	Some providers like VRS Systems (Maschinerring, Sapos...) need your position, without your position they are not able to send you data. Here you can set the time how often you send back your position in seconds, 0 for turn off
11	NTRIP On	Turns NTRIP ON/OFF
12	Cancel	
13	Done	

NTRIP Client Settings

Source Position Advanced

Manual Fix:

- 1 Lat:
- 2 Lon:
- 3 Use GPS Fix

Current GPS Fix:

- 4 Lat:
- 5 Lon:
- 6 Send To Manual Fix

Send To GPS Using:

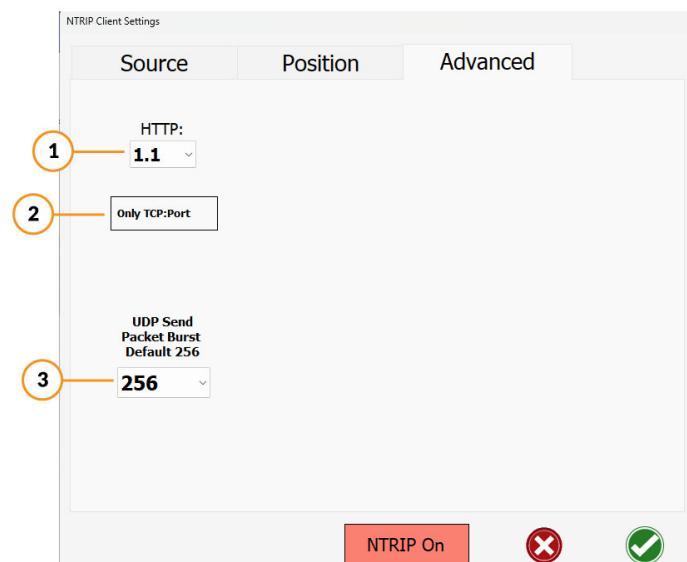
- SERIAL 7
- UDP 2233 8 9

GGA Interval (secs) 10 0 = Off 10

NTRIP On 11 12 13

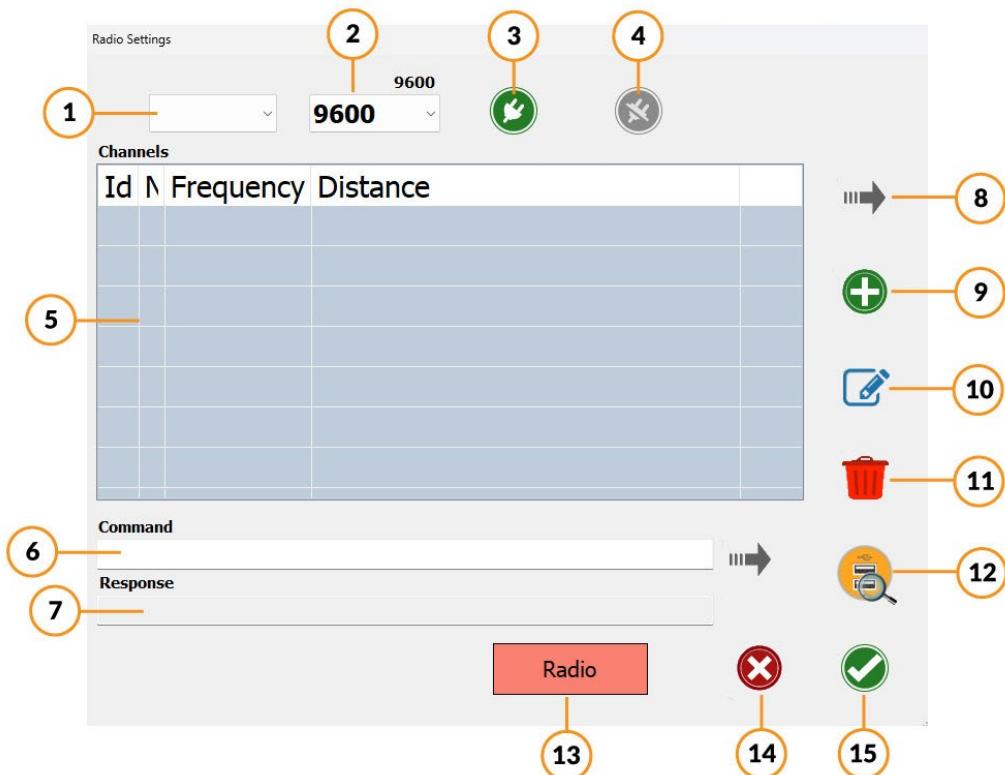
6.7.1.3.-NTRIP configuration (Position tab)

HTTP	Protocol
Only TCP Port	
UDP Packets	Default 256



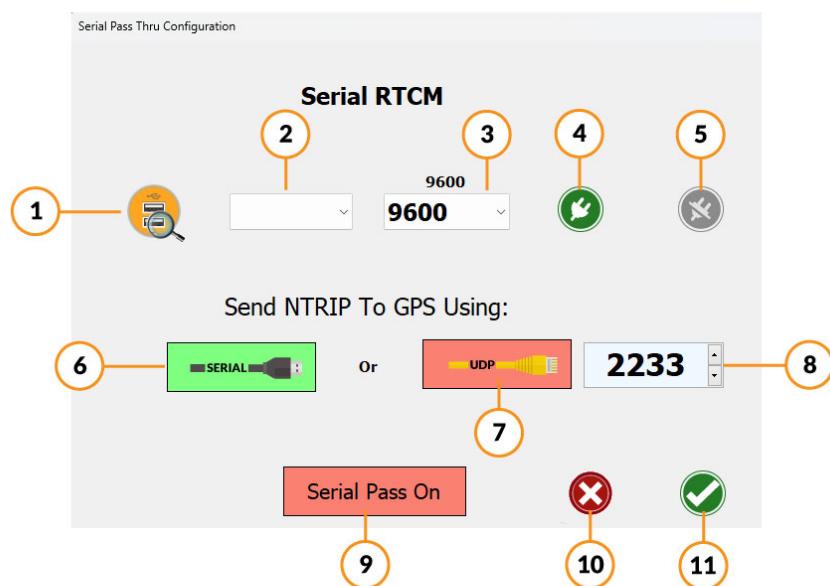
6.7.2.- Radio NTRIP

1	Port	
2	Baudrate	
3	Connect	
4	Disconnect	
5	Channels	Channel identification and information
6	Command Line	
7	Response	Shows response of radio channel
8	Send	Sends the frequency to the radio modem
9	Add Channel	
10	Edit Channel	
11	Erase Channel	Turns NTRIP ON/OFF
12	Scan Ports	
13	Enable Radio	
14	Cancel	
15	Done	

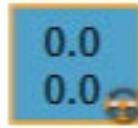


6.7.3.- Serial NTRIP

1	ScanPorts	
2	Port	
3	Baudrate	
4	Connect	
5	Disconnect	
6	Serial Mode	USB or RS232
7	UDP Mode	Shows response of radio channel
8	Port UDP	Default 2233
9	Serial Pass ON	Enable Serial RTCM
10	Cancel	
11	Done	

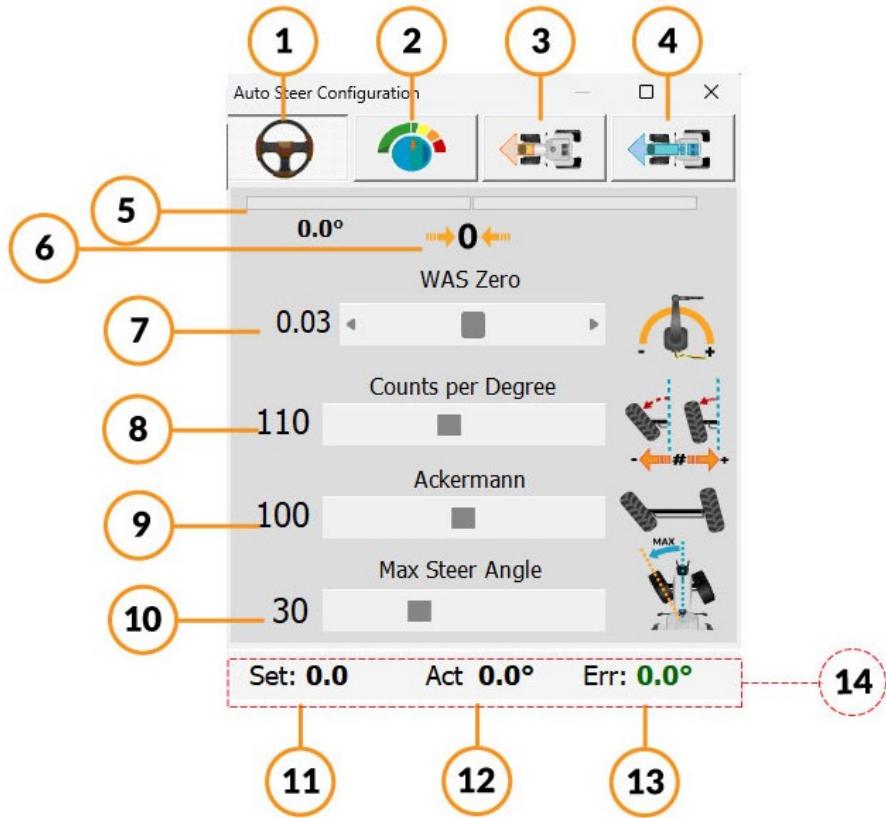


7.-Steer Configuration



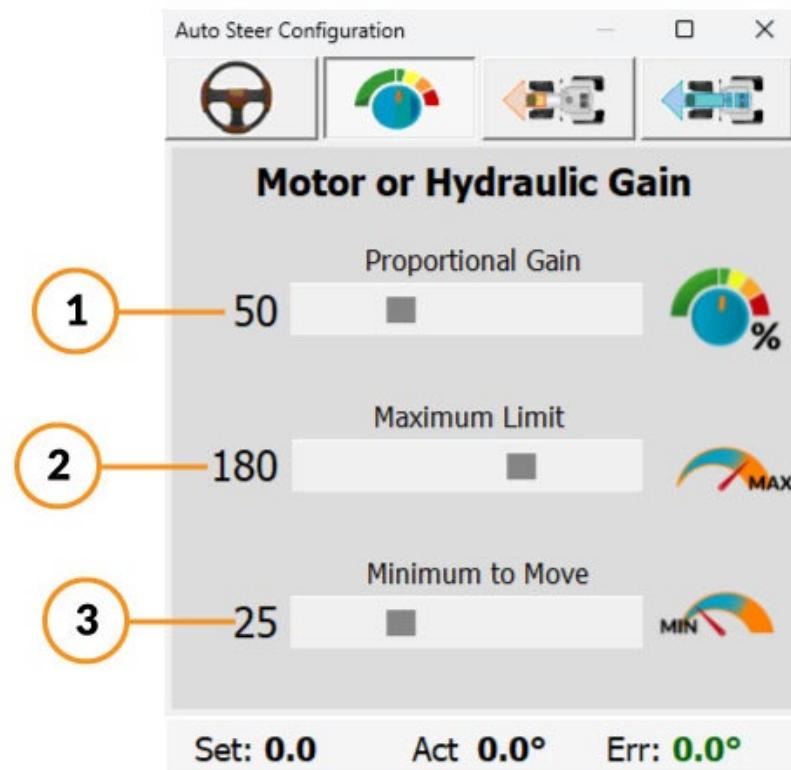
Icon that shows the current angle and the setpoint angle, and is the button to open the steer configuration

7.1.-Steer configuration (Steer Tab)		
1	Steer Tab	
2	Power Tab	
3	Stanley Tab	
4	Pure Pursuit Tab	Also known as PP
5	WAS Angle indicator	WAS: Wheel Angle Sensor
6	WAS Zero	Allows the steering angle to be zero degrees when driving forward. This setting must be done and be zero degrees when driving straight ahead in order to be properly set. Wheel Angle Sensor (WAS) zero allows you to remove that non-zero steering angle so it is zero degrees. This is a very important setting and must be accurately set.
7	WAS Zero slider	For manual calibration, or tweak calibration
8	Counts per Degree	Also known as CPD The A/D converter puts out -4000 to +4000 (8000 in total) levels as the Wheel Angle Sensor puts out 0 to 5v. To convert that into steer angle degrees - because we don't visualize counts very well, we now divide those levels by counts per degree. So, when the CPD is increased, the wheels turn farther for each degree needed. When lowered, the wheels don't turn as far.
9	Ackermann	Ackermann steering geometry is a geometric arrangement of linkages in the steering of a vehicle designed to solve the problem of wheels on the inside and outside of a turn needing to trace out circles of different radius.
10	Maximum steer angle	
11	Steer angle setpoint	Steer angle requested by AgOpenGPS
12	Actual steer angle	Read by WAS
13	Error Angle	Error between setpoint angle and actual angle
14	Expand Steer Config	Virtual Button (double push) shows Drive function in Steer configuration

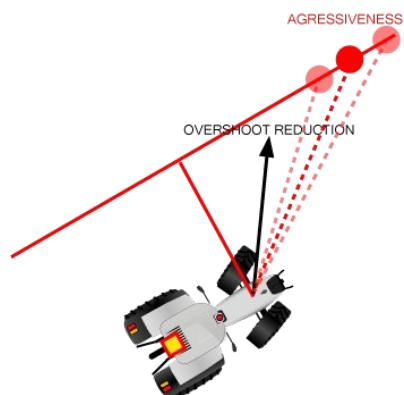


7.2.-Power configuration

1	Proportional gain	The proportional gain are multiplied by the error then added to the minimum PWM value to generate the final output value. The higher this value the faster the motor will correct the steering. However, if it is too high, the steering will overshoot the line and then oversteer the other way again. Too low of a value and it will either take too long or never get to the guidance line
2	Maximum PWN power	The maximum PWM value to generate the final output value
3	Minimum PWN power	Minimum PWM value is used to apply a minimum amount of power to overcome friction of the valve/motor



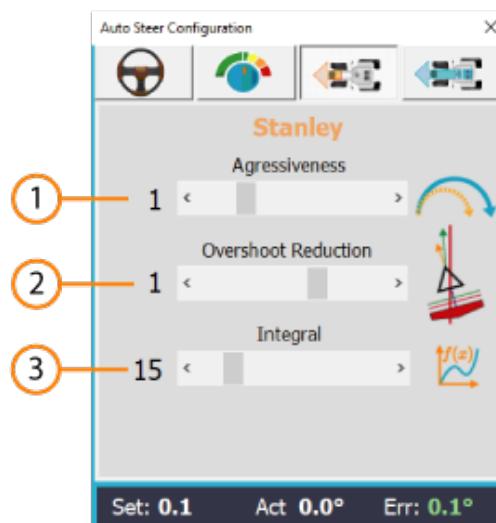
7.3.- Конфігурація керма (вкладка "Стенлі")



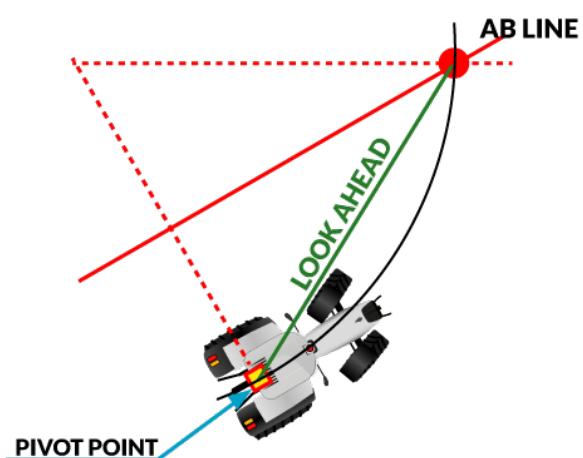
Метод Стенлі використовує передню вісь як точку відліку. При цьому він враховує як на похибку курсу, так і на перехресну похибку поперечної колії. У цьому методі перехресна помилка визначається як відстань між найближчою точкою на шляху до передньої осі транспортного засобу.

7.3.- Конфігурація Стенлі

1	Агресивність	Агресивність працює з відстанню. Чим більше агресивність, тим швидше вона намагається наблизитися до лінії з ризиком перетину за лінію
2	Зменшення перерегулювання	Перерегулювання впливає на те, наскільки сильно протидіє агресивність, утримуючи транспортний засіб від повороту вбік від лінії. Саме переможець з двох факторів, курс і відстань, визначає тривалість часу, необхідного для того, щоб дістатися до лінії. Ідеальний варіант - збалансувати їх так, щоб швидко дістатися до лінії, не зайдждаючи занадто далеко за лінію і не коливаючись туди-сюди (надто агресивно).
3	Інтеграл	Використовує похідні 2-го порядку (нелінійні методи керування), щоб повернути транспортний засіб назад до лінії. Тобто, при наближенні до лінії потрібно почати повертати кермо від лінії, щоб запобігти перетинанню туди-сюди через лінію і не вийти на курс, як на ожеледиці. Навпаки, повернення на лінію займає надто багато часу.



7.4.- Конфігурація керма (вкладка "Чисте переслідування")



У режимі переслідування використовується точка огляду, яка є фіксованою відстанню на опорній траєкторії попереду транспортного засобу, як показано нижче. Транспортний засіб повинен рухатися до цієї точки, використовуючи кут повороту керма, який нам потрібно обчислити.

У цьому методі центр задньої осі використовується як опорна точка на транспортного засобу.

7.4.- Конфігурація Чисте переслідування

1	Look Ahead	Distance in meters how far is reference point
2	Look Ahead Speed Gain	How far the look ahead goes ahead based on speed
3	Sidehill degrees	Sidehill compensation in degrees for each degree in roll
4	Integral	Uses 2nd order derivatives (non-linear steering methods) to bring the vehicle back to the line. As in, as they approach the line it needs to start steering away from the line to prevent crossing back and forth on icy road. the opposite of the look ahead



? X

?

Pure

1	2,5	Look /
2	1,1	Look Ahead
3	0,00	Sidehill Deg
4	15	In
Set: 0,0 Act: 0,0°		

Pure Pursuit

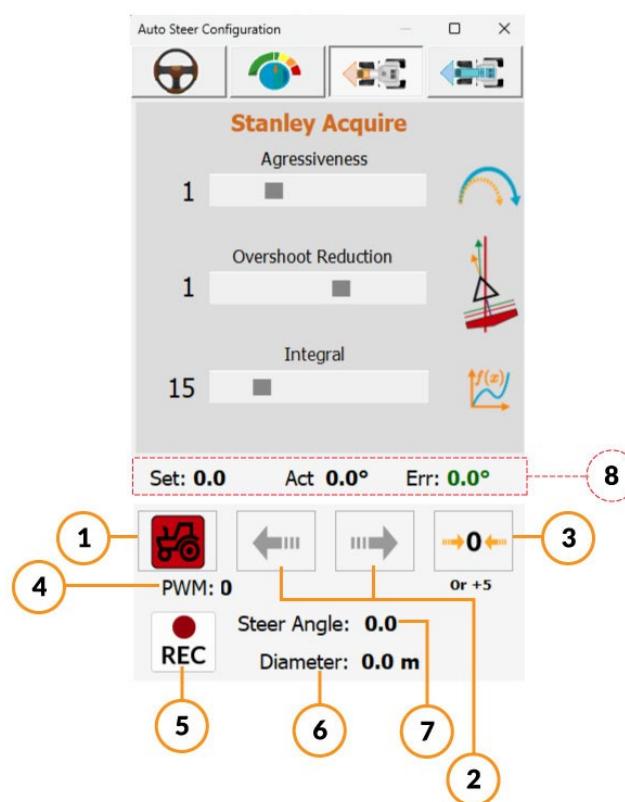
Acquire Look Ahead	3	<	>	? X
Hold Look Ahead	3	<	>	? X
Look Ahead Speed Gain	1	<	>	? X
Integral	15	<	>	? X
Set: 0,0 Act 0,0° Err: 0,0°				

7.5.-Drive and test

If you touch the lower edge (double touch), the drive and test function appears

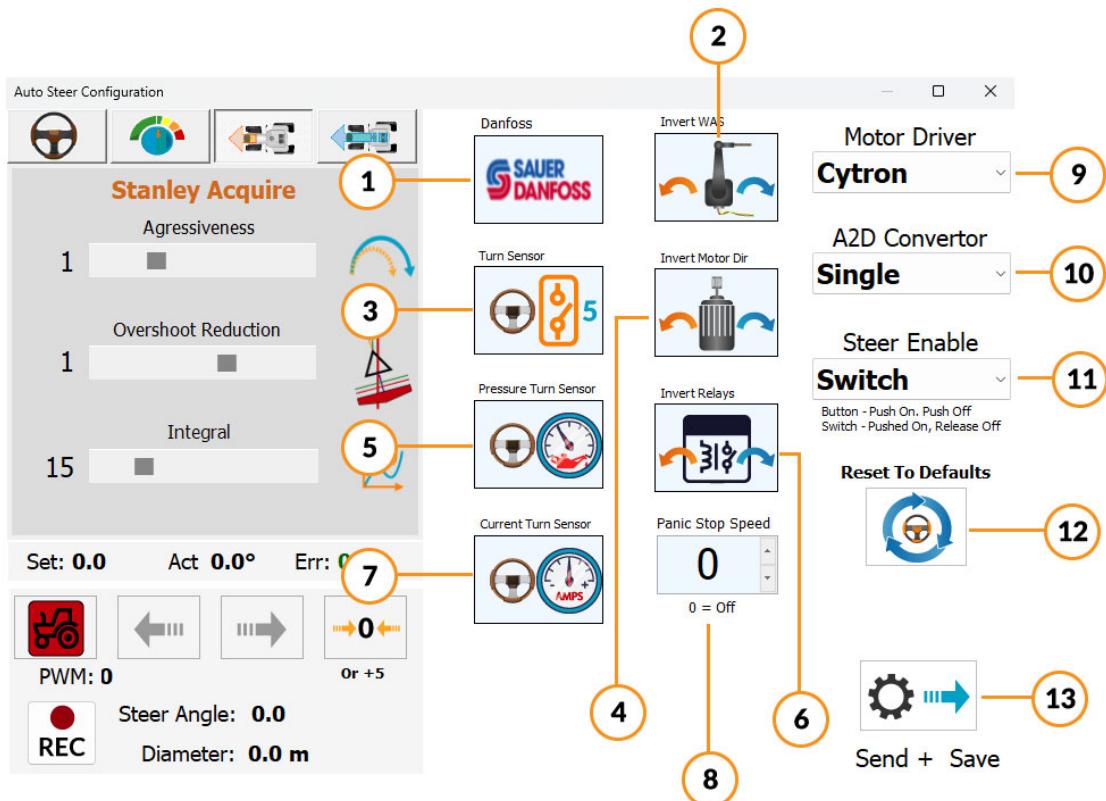
1	Drive	Connect the autosteer even if we don't have a line, drive straight. We can change the angle with the arrows.
2	Snap Left/Right	Increases by one degree in the selected direction
3	Zero	Set angle to zero, or if the is zero to +5
4	PWN	Shows PWM used to run motor/valves
5	REC	Function to calculate the real steering angle, drive steady and show the angle when finished.
6	Diameter	Shows calculated diameter for REC function
7	Steer Angle	Shows Steer angle Shows that is used to calculate the diameter, is very important to keep it steady
8	Expand Steer Config	Virtual Button (double push) shows all options in Steer configuration

With all these functions they help us to correctly configure the parameters of the Steer tab (7.1), WAS Zero, CPD, Akerman and Maximum Steer angle



3.5.1- Arduino steer configuration

1	Danfoss	Activate special configuration for Danfoss
2	Invert WAS	Turn right positive value/ Turn left negative value
3	Turn Sensor	When activated, box appears for counts selection
4	Invert Motor	
5	Pressure Turn Sensor	When activated, slider appears for pressure selection
6	Invert relays	
7	Current Turn Sensor	When activated, slider appears for amps selection
8	Panic Stop Speed	Stop autosteer at value, in Km/h
9	Selection Motor driver	Cytron or IBT2
10	A2D Convertor	Single or differential modes
11	Steer enable	None, switch or button
12	Reset	Reset to default values
11	Send and save	Mandatory for any change in this menu



8.- Steer Mode



By pressing the button, you can change the steering mode, the active mode is the one shown, P for Pure Pursuit and S for Stanley.
The small numbers above the icon are the integral correction calculations

11.-Steer Indicator

The direction indicator gives you information about the direction module. It also rotates like the wheels of the vehicle do.
There are four colors to know the status of the autosteer.



Purple

No steer module connected



Red

Steer module connected, not enabled



Orange

Steer Module connected and enabled; steer switch off



Green

All connected and enabled

AgOpenGPS Main Screen (Field Opened)



17.- Flags

18.-Version/Paint color Mapping

19.-AB line

20.-Autosteer

21.-Uturn

22.-Automatic sections

23.-Manual sections

24.-Cycle AB line

25.-AB line

26.- AB curve

27.-Contour

AgOpenGPS Main Screen (Field Opened AB Line selected)

Once an AB Line has been selected, new icons appear on the lower edge with new functions, all of them can be hidden from the General configuration, Icons submenu (3.7)



28.- Snap to pivot

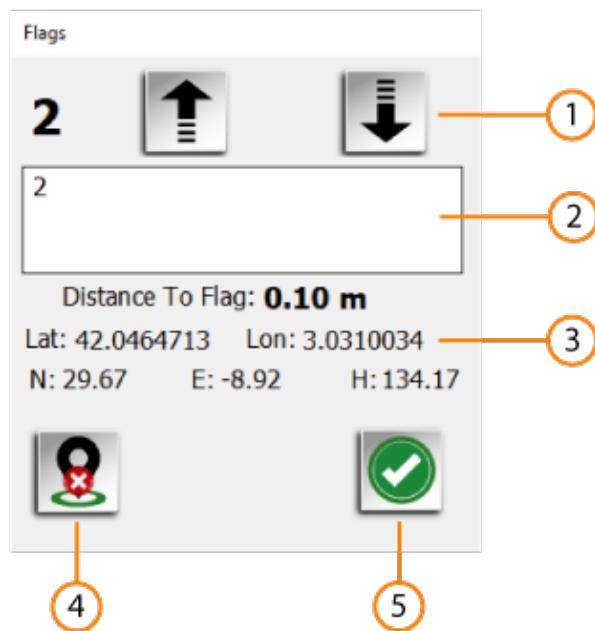
29.- AB Line Edit

30.- Your Skip

31.- Uturn skip

17.-Flags

7.5.-Drive and test AgOpenGPS allows you to flag anything you want to mark		
1	Navigation arrows	Browse through the available flags.
2	Flags list	
3	Flag information	
4	Delete Flag	
5	Done	



18.-Version/Paint color Mapping



Icon that shows the current version, and is the button to open the color picker for mapping.

In AgOpenGPS you can choose anything color for mapping



1.-Day mode

2.-Night mode

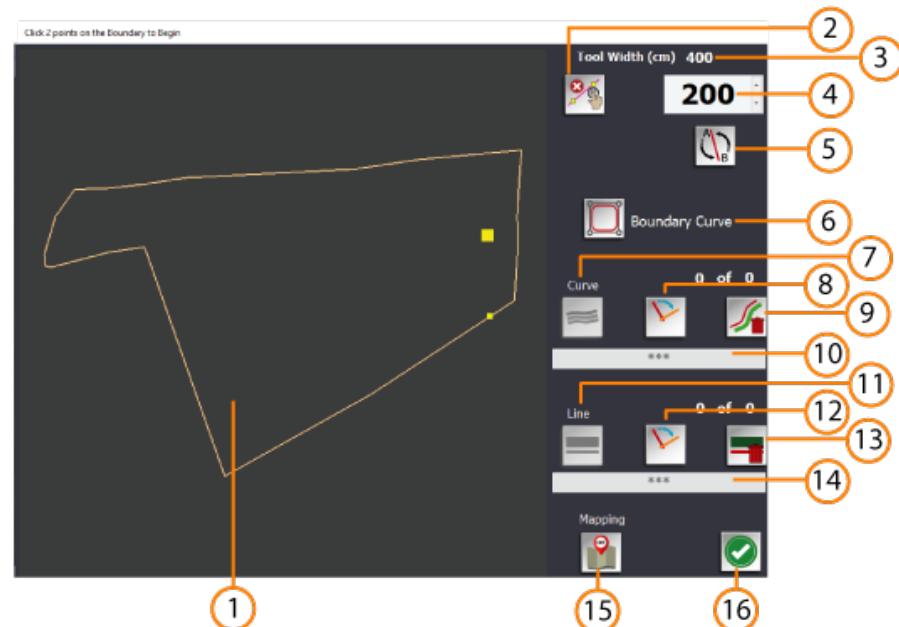
3.- Lock/Unlock colors

4.-Done

5.-Preset colors

19.-AB Line

1	Field Map	In the field map you can create all AB lines, existing ones are also shown. To create a new line, you only have to select two points on the boundary (the points can be deleted with the icon 2 "Point delete"). The line between the two points is created using the icon 7 "Curve" or the icon 11 "Line".
2	Delete Point	
3	Attachment width information	
4	Distance to boundary	By default, is half the width of the attachment
5	AB Line Swap direction	
6	Boundary curve	Create a curve line following the boundary limit
7	Curve	For manual calibration, or tweak calibration
8	Cycle Curve Lines	
9	Delete selected curve	
10	Curve information	Heading direction and time.
11	Line	
12	Cycle Lines	
13	Delete selected line	
14	Line Information	Heading direction and time.
15	Mapping	Shows in map paint sections.
16	Done	



20.-Autosteer

This icon is a button to activate the autosteer module (in green), if it is disconnected or deactivated, it is shown in red.

The letter refers to the option in general configuration 3.1.4, M for Manual and R for remote

3.1.4.1.- Button to let the software button follow the steer switch / button status



Green

ON



Red

OFF

21.-Uturn



Green

ON



Red

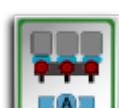
OFF

Uturn configuration in 3.4

22.-Automatic sections



ON



OFF

This button allows control sections with machine module.

You can see sections on or off in section display (9)

23.-Manual sections



ON



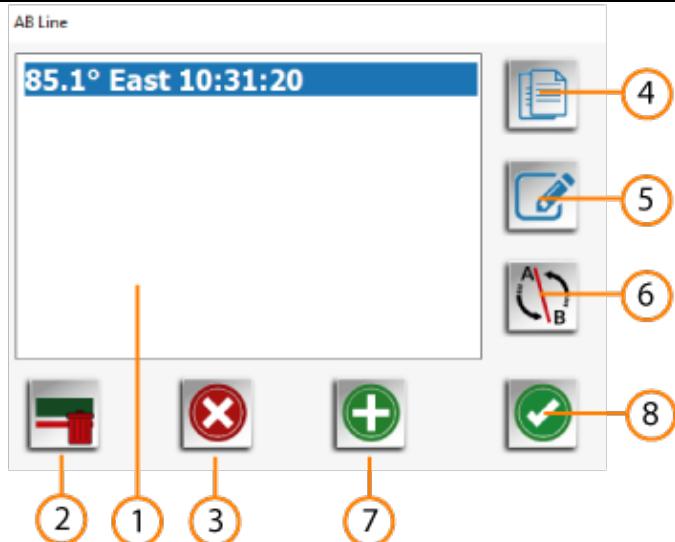
OFF

This button allows you to control sections manually

You can see and operate individual sections (on or off) in section display (9)

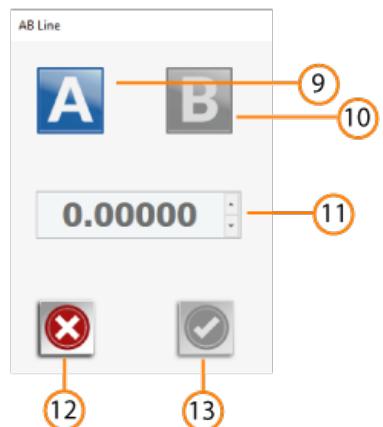
25/26.-AB Line/Curve

1	Line list	
2	Delete selected line	
3	Cancel	
4	Duplicate line	
5	Edit Line	
6	Change direction line	
7	Add AB line	New window appears, point 9 and following
8	Done	



This new window allows you to make a new AB Line driving between two points (A to B)

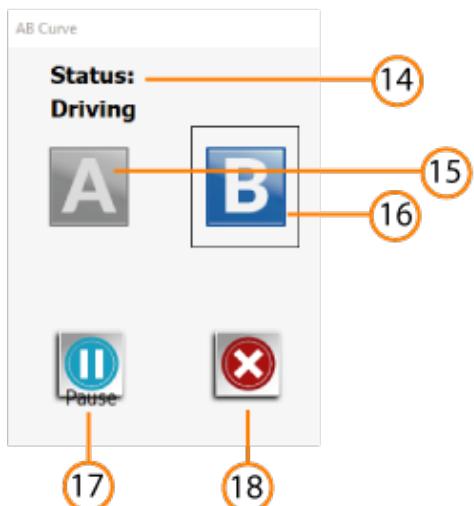
In Line



9	A Point
10	B Point
11	Heading direction
12	Cancel
13	Done

This new window allows you to make a new path driving between two points (A to B)

In Curve



14	Status
15	A Point
16	B Point
17	REC/Pause
18	Cancel

27.-Contour

This button change line to contour line

When activated a new button appears.



1 Lock/Unlock

Locks or unlocks the line tracking, forcing to follow the line once it is locked, if it is in the locked position an intermittent message appears on the screen

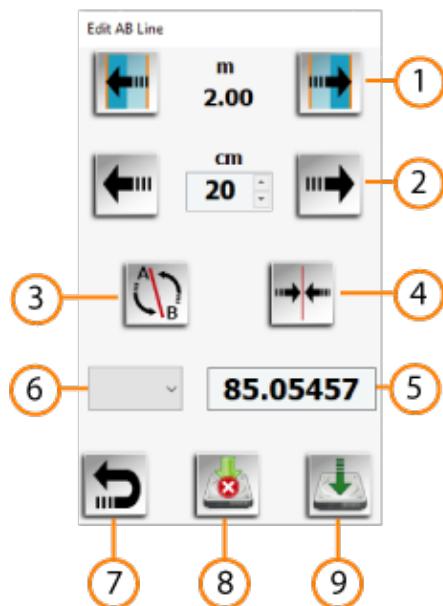
28.-Snap to pivot



This button sets the line at the pivot point

29.-AB Line Edit

1	Half Snap	
2	Snap	
3	Change direction line	
4	Snap to pivot	
5	Heading direction	You can manually edit heading direction
6	Presets heading direction	0/90/180/270 Degrees
7	Cancel and return	
8	Done but don't save	
9	Save and done	



30.-Your Skip

Automatic skips in uturn like picture in icon



Enabled

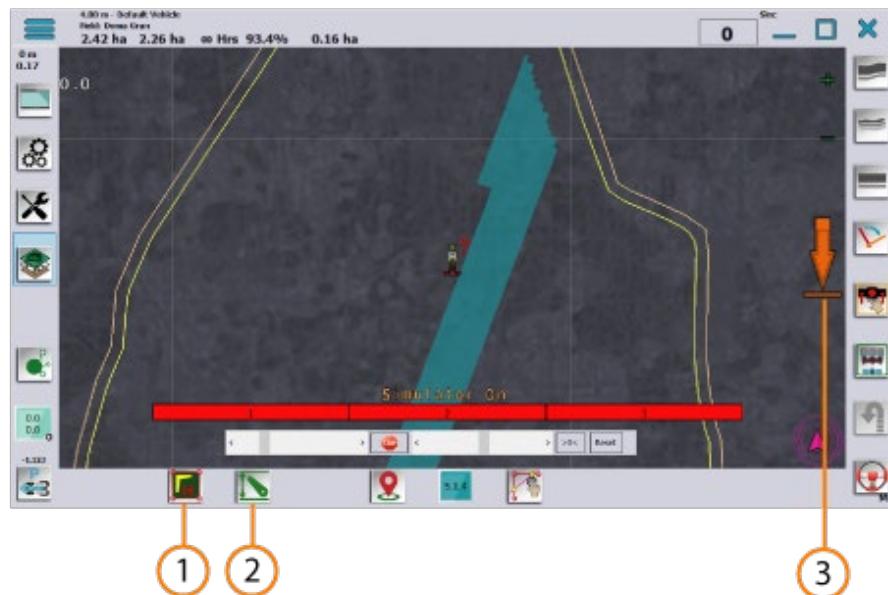


Disabled

31.- Uturn Skips

Drop-down list with skip options in U Turn (0 to 10)

32.- Headland (active)



1 Headland ON/OFF

2 Lift Control ON/OFF

3 Arrow lift control UP/DOWN info