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This manual presents the interfaces of SWS as well as the mode of accessing the information resulting from the field operation of the machines with embedded technology of Hexagon Agriculture.

The symbols used in this manual has the following meanings:

Туре	Description
A HAZARD	Indicates a situation of imminent hazard, which, if not avoided, will lead to death or serious injury.
	Indicates a situation of potential hazard or undue use which, if not avoided, can lead to minor or moderate injury, material, financial loss and environmental damage, or all of them.
	Important information which must be observed, so that SWS is used in a technically correct and efficient manner.

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1 System Overview

SWS is a server with georeferenced database and application, which processes the files of maps recorded in the computer on board, generating routine and follow-up reports of the activities, made available to the producers and providers.



Figure 1 – SWS Application

SWS has the following main functions:

- Machine Performance Panel;
- Operation quality indicators and maps;
- Fleet management;
- Planned x Executed Follow-up.

2 Executing SWS for the First Time

2.1 Registration and Access

1. To access the SWS system, enter address http://www.hexagonagriculture.com and click on lcon

🧟 SWS Login.



Figure 2 - SWS localization on site

- 2. Enter with Login (1) and password (2) data provided by Hexagon Agriculture.
- 3. Select the language required (3) and click on Enter (4).

() IMPORTANT

Users are advised as follows: Internet Explorer 8 or later, Mozila Firefox 3.6 or later, or Google Chrome.

IMPORTANT If the user forgets the password, it is necessary to request a new password clicking on field "**I forgot my password**" (5). An email with the new access password is sent to the email registered.

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O2 Senha			
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Figure 3 - Login screen

After the login in the system, the Main Menu is available to the user allowing access to the following modules:





Figure 4 - Upper Bar

Information	Description	Further information
Start	Graphs of alarms and summaries of week.	Chapter 3
Registration	Registration of users, computers on-board, maps, activities, etc.	Chapter 4
Points	Dispatch of points and viewing of files sent.	Chapter 5
Reports	Includes operation quality report screens (status, deviations, product resources) and the times and yields (productive hours, stoppages and mainte- nance, distances traveled, rpm, movement speeds), etc.	Chapter 6
Infrastructure	Module concerned with management of mobile assets of road infrastructure. It includes registration screens and reports with information of productive hours, stoppages and maintenance, distances trav- eled, rpm, movement speeds), etc.	Chapter 7
Agriculture	Module concerned with management of agricultural activities.	Chapter 8
Tools	Module with support functions for the management and embedded system of Hexagon Agriculture.	Chapter 9
Support	Area for inquiry concerning the version of the SWS management system and help desk when it is necessary to open calls to handle the embedded technology (on-board computer) or SWS management system.	Chapter 10

The **Start** menu appears as the start screen of SWS and contains a dashboard with information of the latest data updates sent to the system, as the map of the stands initialized last week, graphs and information as per user customization and configuration.



Figure 5 - Start

3.1 Email Dispatch

The **email dispatch** takes the information present on the user's dashboard to his/her email once a week.

To activate the email, click on **Configurations** on the tab Email dispatch and click on **Activate**.

Bem-vindol		
Bem-vindo à nova versão do SVVS da Arvus Tecnologia.		
Com tecnologia atualizada, buscamos oferecer um ambiente mais agradavel, de boa usabilidade e que atenda às necessidades de forma clara e objetiva.		
Equipe SWS	Ativar envio de email	>
Para alterar as opções de envio de relatórios por E-mail, cilque no botão configurações.	Deseja ativar o envio de relatório por email?	
	02 Ativar Fechar	
	1	

Figure 6 - Activate Email

To deactivate this function click on **Configurations** on tab **Email dispatch** and select the option **Deactivate**.



3.2 Map

In Map it is possible to view the last stand worked on.

3.3 Decalibration Alarm

The **Decalibration alarm** is a standard graph of the dashboard which allows the follow-up of how many on-board computers were not calibrated by activity, aiming at identifying the nonconformities and immediate improvement action.

Place the mouse on the graph to view the number of on-board computers which are decalibrated.



Figure 8 - Decalibration Alarm

3.4 Low Efficiency Alarm

The **Low Efficiency Alarm** is a default graph of the dashboard which indicates the number of on-board computers which have efficiency of less than 40% for each activity monitored.



Figure 9 - Low Efficiency Alarm

3.5 Viewing of Customized Data

On the dashboard it is possible to make available the graphs of the reports of Management of Mobile Assets - Machines customized as per the user's viewing requirements, providing a quicker and integrated view on the dashboard itself.

To customize this type of information, execute the following steps:

- 1. Enter in the main menu in Reports Mobile Assets Management Machine Times.
- 2. Choose the Producer / Provider / Period / Activity and select the option Generate Report.
- 3. Thematic tabs will appear containing the reports. Any graph of these tabs can be exported to the Dashboard.



Figure 10 - Viewing of Customized Data

5. Choose a Name for the graph or maintain the original name, choose in Period the time interval and click on Add.



Figure 11 - Add Graph to Start Page.

6. The graph is inserted in the Dashboard.

4 Registration

In this module the parts of the system are registered, as:

- Companies
- Farm/Stands
- Activities
- Models of on-board computers
- On-Board Computers
- Time Reasons
- Work Shifts
- Product Resources
- Equipment/Producer/Provider
- Vehicles

After the registration of the parts, they are associated with each other:

Producer ↔ Provider ↔ Activities



The access in this option is only allowed for the system administrators.

Producer ↔ Provider ↔ On-Board Computer

IMPORTANT Every system is duly associated with and reflected in the user permissions, paying attention to the nondisclosure of company information.

4.1 Company Registrations

In the registration of companies data is requested as: Tax ID, Name, Trade Name, Address and daily work. Choose the type to be registered in the options below:

Controller

Company which generates the information of the operations monitored, presenting it to the producer and provider users, in this case Hexagon Agriculture.

Producer

Company owning the forests.

Provider

Company contracted to the producer company.

/ Empresas							
Filtros						× 1	
	CNPJ						
1	lome						
Nome fai	ntasia						
End	ereço						
	Tipo 💿 🔵	0 0					
	Todos Contro	lador Produtor Provedor					
	Buscar L	impar					
Empresas							
Novo Novo Legenda 1 a 15 de 135 // 🗮 📥 🖬							
	Nome fantasia	Nome •	CNPJ ¢	Tipos	Endereço e	Data de cadastro +	
20	HX-AG	Hexagon Agriculture	00.000.000/0000-00	Provedor		07/11/2013	

Figure 12 - Company Registration

4.2 Farm/Stands Registrations

For the **registration** of maps of the **Farms and Stands** it is necessary that the maps are in shapefile (ESRI), preferably in projection WGS84 LatLon (EPSG 4326).

For the registration of maps of the Farms and Stands choose the **Perimeter Type**:

Perimeter not effective (farms): shape in projection wgs84, with information of the farm name, farm code, regions, glebes, among other information of the company divisions. For the registration of perimeter not effective it is necessary to fill in the fields FARM, CDFARM

Perimeter effective (stands): shape in projection wgs84, with information of the stand code, farm name, farm code, regions, glebes, among other information of the company divisions. For the registration of perimeter effective it is necessary to fill in the fields FARM, CDFARM, STAND



Figure 13 - Registration of Farms and Stands

4.3 Activities

For the registration of **Activities** it is necessary to indicate the activity name, activity code and classification logic of times.

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/ Atividades					
Filtro(s) para busca					x ^
Código					
Descrição da Atividade	2				
Produto	r Selecione um produtor				
Lógica de Tempor	Selecione				
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Códi	go Nome no Computador de Bordo e	Descrição da Atividade o		Produtor •	Lógica de Tempos o
21 A A		Preparo de Solo			Botão Remoto
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Figure 14 - Activity Registration

4.4 On-Board Computer Models

For the registration of **on-board computer models** enter with the model name.

🧷 Modelos de	CBs	
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1	Titanium	
1	TxV	
20	Txf ^e	
20	Horizon	
20	Agrosystem	
10	T15	
20	SatLoc	
20	T17	

Figure 15 - Registration of On-Board Computer Model

4.5 **On-Board Computers**

For the registration of **on-board computer** enter with the Serial Number and equipment type.

Computadores de Bordo										
elitros «										
Número de Série										
Número de Act	ivação									
	Buscar Li	impar								
omputadores de	Bordo							14. 4		
	.egenda						1 a 25 de 3265	lés és 👄 🖬		
	Número de Série 🗧	Modelo ÷	Módulos	Número de Activação	Chave de Ativação	Versão do Firmware 🗧	Produtor	Provedor		
1 🖉 🗊 😽	1575	Titanium	1	00d06945f2aa	8002021b - 0019918a - 6fe5ad89 - 0000dca3 - a3c513a3 - 9101e626 - 6a563b96 - 58ab9905 - 711ab9ac					
2	0004F2200	TxF					Hexagon Agriculture	Hexagon Agriculture		

Figure 16 - Registration of On-Board Computers

4.6 Time Reasons

For the registration of **time reasons** indicate the description of the stoppage reason.

	•		
Código Arv Descriç Produt	vus ção stor Selecione ¥ Buscar Limpar		
is de Tempo Novo(a) 🛛 🤪 Leger	inda Códino Aprus	Descricio ±	1 a 25 de 712 🌾 🔶 🖛
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s de Tempo Novo(a) ♀ Leger 1 2 1 2 1 2 1 3 2 1 4	inda Código Arves	Descrição e Prepara Maq Deslocamento Manotra Asat Combustivel	1 a 25 de 712 //

Figure 17 - Registration of Stoppage Reasons

4.7 Work Shifts

Registration of **work shifts**. Enter with the data of the producer, provider and the work shift start and end time.

🗁 Turnos de Trabalho						
➡ Filtros						
Produtor *	Hexagon Agriculture	Provedor •	JFI-MS	Min. Trabalhado (ha) *	0.1	
Periodo	Últimos 30 dias	Data Inicial	20/02/2016	Data Final	21/03/2016	
Atividade *	1003 - Preparo de Solo com fer	Equipamento	Selecione 🗸	Turno *	08:00:00 - 16:00:00	
Veiculo	Selecione					
Buscar						
Gráficos Gerais						
 Gráficos Por Equipamen 	to					
 Gráficos Por Classificaçã 	ão De Tempos					
 Dados Diários 						
Classificação De Motivos	De Tempo					

Figure 18 - Registration of Work Shifts

4.8 **Product Resources**

Registration of **product resources** used in the mechanized operations. Indicate the code, name of the On-board computer and the description of the product

/ Insumos			
Filtros			• ^
Códi	go Arvus Iescrição Buscar Limpar	Nome no CB	
Insumos	Legenda		1 a 15 de 147 ⊨ 🚖 🔿
	Código Arvus	Nome no Computador de Bordo o	Descrição o
20	1	Cinza (CCM 40.4)	Cinza Calcio-Magnesio CCM 40:4
20	2	Fosfato	Fosfato Natural Reativo
20	3	Sulfato de Amonio	Sulfato de Amonio+0,5%8
20	4	NPK 6:30.6	NPK 06-30-06+1%Cu+1%Mn+0.8%Zn
1	5	NPK 10:00:30	NPK 10-00-30+0,5%B
2 m	R	NDK 14:00:15	NDK 14.00.1540 5%R

Figure 19 - Registration of Product Resources

4.9 Equipment/Producer/Provider

Registration for association of the equipment with the producer and provider.

Nome fantasia Nome est Producer 46.543.2166494-65 Nome	CNPJ Endereço Data de cadast 30/09/2010
est Producer Test Producer 46.543.216/5494-65	30/09/2010
lterar	
dataan Powetar ek Newton Ala Jacobaan Concentration de Route	

Figure 20 - Registration for association equipment/producer and provider.

4.10 Activity/Producer/Provider

Registration for association of the activity with the producer and provider.

Detalhes do Produtor					
Nome fantasia	Nome	CNPJ	E	ndereço	Data de cadastro
Test Producer	Test Producer	46.543.216/5494-65		30/0	9/2010
Adicionar Provedor					
Adicionar Provedor Test Provider C Adicionar Adividade					
Adicionar Provedor Test Provider Adicionar Atividade 101 - Aplicação Gesso		102 - Apit	ação Calcário		
Adicionar Provedor Test Provider Adicionar Adividade 101 - Aplicação Gesso 104 - Milheto		102 - Api 72 - Puiv	ação Calcário izador		



Figure 21 - Registration for Association Activity/Producer and Provider

4.11 Vehicle

For the registration of vehicle enter with the information of producer, provider,

Vehicle ID, model, manufacturer, vehicle type and equipment.

Veículo								
Identificaçã	Produtor Selecione	t	Provedor Selec	ione	v Tipo de	Veiculo Selecione	×	
▼ Dados	_							
Produtor	Provedor	Identificação do Veiculo	Modelo	Fabricante	Tipo de Veículo	Equipame Serial	nto Acoplamento	Ações
HX-AG	Hexagon Agriculture	CAT 140K	CAT 140K	Caterpillar	Motoniveladora	X000X X000000000X	22/12/2015	
HX-AG	Hexagon Agriculture	CB 02	24-250 6X2	Volkswagen	Caminhão Basculante	X000X X000000000X	27/10/2015	
HX-AG	Hexagon Agriculture	CB 68	31280CRM6X4	Volkswagen	Caminhão Basculante	X000X X000000000X	15/10/2015	
HX-AG	Hexagon Agriculture	CP 01	31-280	Volkswagen	Caminhão Pipa	X000X X000000000X	27/10/2015	

Figure 22-Registration of Vehicle

Georeferenced points are collected by the on-board computers (CBs) every second, being essential for SWS analyses. The points record various information regarding the activities executed in the field, as application of product resource, recommendation of product resource, depth, calibration, distance between lines, time, speed, time reasons, activity type, producer, provider.

5.1 File Dispatch

The **file dispatch** of the on-board computers can occur through the providers or employees of Hexagon Agriculture. Add these files to the system to be processed.

The files can be two types in accordance with the equipment type:

- TxF: the file to be sent has the extension APC,
- Titanium: the file to be sent has the extension TI.

The dispatch of files in normal mode is used in situation in which the information of Provider, On-Board Computer and Activity is all correct in the file.

To ensure the good processing of the files sent, note the following instructions:

- Send at most 5 files at a time, with different names;
- Files must be in the formats APC, Ti or compacted files (Format ZIP) containing APC and/or Ti files;
- The compacted file can contain folders, but cannot contain other compacted files.

For the dispatch of files, enter in the module Points - File Dispatch.

- 1. Select the producer;
- 2. Add the items to be sent.



In the standardization of folder ID use the name of the producer company, provider, activity and project: Empresa_Provedor_Ativ00_Proj.zip



Figure 23- File Dispatch

Check the status of the processing of the files sent in Files sent.

5.2 File Dispatch In Advanced Mode

When the data of the files as producers, providers, equipment ID is not coherent, it may require sending the files in **advanced mode**. Use this dispatch option, when it is necessary to force information.

In this condition, it is necessary to indicate to the system the producer, provider, on-board computer and activity. The files are added and sent, appearing in the window **Files sent**, with the status of their processing.



Figure 24 -Send Files in Advanced Mode

5.3 Files Sent

This window contains the sequence of files sent and their respective status.

🗁 Arqu	jivos E	inviados	s										
Filtros													
		Produte	or H	lexagon Ag	riculture 💌	Provedor Hexi	agon Agriculture	•					
		Arquiv	vo			Usuário							
		Estad	to S	elecione	•	Efetivo até (%)							
		Data Inici	ial 02	2/12/2015		Data Final 02/0	3/2016	🔲 🛛 🖸	1)				
	C	ompactad	io 🔽	/									
	Tama	inho da fi	ila 2			Status Proc	essando						
				Buscar	impar					Itens por p	ágina 15	-	
Resultad		3 	04	Status +	Data de envio •	Data de Processamento +	08 Arquivo ‡	Produtor \$	09 Provedor +	10 Atividade	 Área (ha) •	12 1 a 15	Usuário :
	4	•		4	23/02/2016 23:02:39	23/02/2016 23:04:48	HX-AG_SUB10.TI	Hexagon Agriculture	Hexagon Agriculture	1003	28.22	99.89	Ana Rosa
•				*	23/02/2016 22:50:07		HX-AG_SUB_CB4434.zip	Hexagon Agriculture	Hexagon Agriculture		0.0	-	Ana Rosa
•				*	23/02/2016 22:40:53		HX-AG_SUB_CB977.zip	Hexagon Agriculture	Hexagon Agriculture		0.0	-	Ana Rosa
	4	•	9	4	18/02/2016 22:26:47	18/02/2016 22:45:15	ARVUS_SUB1.Ti	Hexagon Agriculture	Hexagon Agriculture	1003	4.93	100.0	Ana Rosa
E	1	•		1	18/02/2016 22:26:47	18/02/2016 22:47:35	ARVUS_SUB10.Ti	Hexagon AgricultureS	Hexagon Apriculture	1003	23.98	100.0	Ana Rosa

Figure 25 - Files Sent

1. Filter

It allows filtering the files sent by provider, file name, name of the user who sent the data, file processing status, effective area % and start and end dates.

2. Indicator of compacted file

Click on the icon to show/hide the file list in the compacted folder.

3. Download of shapes

It is possible to download any processed APC, in shape format.

4. Maps

For each daily file sent to the system, it is possible to view the maps of points, speed, depth, distance between lines, calibration, recommendation, dosage, manuring sensor, date and time classification. These files refer to the set of points of a day worked of a single item of equipment.

5. Status

If the status has an error, there were problems in the processing of this file or any of the files which compose it. To see the details of the processing, click on the gray arrow in the first column of the table.

The processing errors are usually associated with the registration. For example, if files were sent referring to Equipment number 100, but this equipment is not registered in the system, there will be an error in the processing. After the regularization of the Registration, this same file can be reprocessed.

5. Data de envio

Date upon which the user sent the APC/Ti files.

6. Processing date

Date upon which the file was processed.

7. File

NIn this field, there is the name of the zipped folders in the green lines, and the APC files thereof, in the white lines.

The folder name follows the standard: Empresa_Provedor_Ativ00_Proj.zip.

In general, in the APC files, the file name includes 4 numbers referring to the serial number of the on-board computer and 4 numbers referring to the monthday. Example: 02200812 (CB 220, file of August 12).

8. Producer and Provider

Identification of producer and provider.

9. Activity

Identification of activity executed.

10. Area (ha)

It refers to the area worked fitting in the effective area of the productive unit.

11. Effective (%)

It refers to the percentage of the area worked related to the total area.

12. User

User who sent the files.

The reports are an essential part of SWS, as they allow the user to follow up at different operating, time and spatial levels the activities executed in the field, being a powerful management tool.

6.1 Concepts for Report Generation

To generate reports it is important to understand certain essential concepts, present in the Hexagon Agriculture Systems, thereby facilitating the analysis of the graphs, maps and tables.

6.1.1 Time Classification

All the points collected are classified as per the logic referring to different activities. Parameters as speed of the tractor, speed of the fertisystem or depth of the subsoiler rod are considered in determining the time type.

Productive Time

It considers productive points when it is not in suspended operation and the machine is in full operation, applying product resources and/or subsoiling.

Auxiliary Time

Time referring to events auxiliary to production, usually characterized by the maneuvers, but it can be configured as per producer requirements.

Wasted Time

It classifies the points as wasted when the machine is in suspended operation and the speed exceeds 0 km/h, an event usually characterized by movement, but it can be configured as per producer requirements.

Others

When the machine is in suspended operation and the speed equals 0 km/h.

Whenever the machine has the remote button activated, the operator indicates the reason for the suspended operation. The reasons for suspended operation are characteristic of each company, the most common being: maneuver, preparation of the machine, calibration, meals, supply and maintenance.

Operating Time (h)

It is the total time that the machine remained in the field, considering all the productive time and the events of suspended operation.

Operating Time (h) = Productive (h)+Auxiliary (h)+Wasted (h)+Others (h)

Effective Time (h)

Recorded as the sum of the productive and auxiliary time, not considering the time consumed in interruptions, stoppages and movement.

Minimum Effective Time: considering a machine group, it refers to the productive and auxiliary time of the machine which least worked in the day's work.

Average Effective Time: considering a machine group, it refers to the average of Effective Time of the machine unit in operation in a day's work.

Maximum Effective Time: considering a machine group, it refers to the productive and auxiliary time of the machine which most worked in the day's

work. Effective Time (h)= Produtivo (h)+Auxiliary (h)

6.1.2 Operating Field Capacity (ha/h)

The **Operating field capacity** is the ratio between the area or production obtained and the total time that the tractorized unit remained in the field, i.e., it takes into account the sum of the effective time with the sum of all the interruption times which occurred during operation. It can be obtained related to the area (hectares) or in terms of production.

CcO (ha/h) = (Area (ha)) (Operating Time (h))

6.1.3 Effective Field Capacity (ha/h)

The **Effective field capacity** is the ratio between the area obtained and the total time elapsed in the execution of a determined mechanized operation (plowing, harrowing, spraying, manuring, harvesting, etc.), i.e., effective time does not take into account Time Lost and Other Time, consumed in movement, supply of the machine or implement, electrical and mechanical maintenance, meals, preparation of the machine, etc.

CcE (ha/h) = <u>(Area (ha))</u> (Effective Time (h))

6.1.4 Effective Field Yield (%)

The **Effective field yield** is the ratio between capacities of the same nature (same units), being a parameter which estimates or indicates the losses of area worked due to interruption times occurring in a work period.

6.1.5 Area

Area Applied

The calculation of the area covered and executed in two different manners, from:

- the calculation of the area by the distance traveled (distance method);
- the calculation of the area by concentration of application points (geometrical method);

Both the methodologies should generate very similar results. If this does not occur, then there is a mismatch in the application properly speaking or in the data collected.

Area Traveled (ha)

In this methodology the area calculated is simply the product of the distance traveled by the tractor and the distance between lines specified by the o operator in the on-board computer. This calculation is subject to two types of error due to the differences between rated (specified by the operator) and actual distance between lines.

In the case of actual distance between lines being less than the rated one, the area calculated is greater than that actually covered, as intersections are added twice. In turn, when the actual distance between lines is greater than the rated one, the area calculated is less than that actually covered, as there are intervals between two lines which are not recorded.



Figure 26 - Distance between lines

When the average distance between lines is correct, the calculation of the area by this method also is, as the areas added twice are compensated by the areas added, leading to a correct estimate.



Figure 27- Area traveled

Area Worked (ha)

This methodology takes into account standards of concentration of points to calculate the area covered and is stronger and less liable to errors related to variations between distance between rated and actual lines. The area is estimated from a set of points of application and a radius of action for each point, this radius of action being related to the distance between rated lines.

When the actual distance between lines is less than the rated one, there will be greater overlap area in the region with greater concentration of points, the overlaps only being considered once in the calculation. For situations where the actual distance between lines is greater than the rated one, the occurrence of overlapping areas will be les and depending upon the density of points, the area is not added in the geometrical calculation.





Below there are the direct consequences implied by actual distances between lines greater than the rated distance, the contrary also applying for situations where the actual distances between lines are less than the rated distance.

- 1. The dosage in kg/ha decreases, although the dosage in kg/plant remains unaltered.
- 2. The distance traveled by the tractor is less than the same area, calculated by the geometrical method, covered.
- 3. The quantity of product resources used is less than that foreseen using the original area and the recommendation of dosage in kg/ha.
- 4. The number of lines is less and, consequently, the future number of plants per ha.

The spacing indicated by the operator in the on-board computer interferes directly in the calculation of the area worked (ha) and area traveled (ha), consequently, in the status worked (%), quantity of product resources per productive area (kg/ ha) and per area traveled (kg/ha), as well as the deviation of the area worked (%) and the area traveled (%). Regarding the deviations the quantity of product resources applied by unit of area traveled related to the recommendation is considered, while the geometrical area considers only once the overlapping areas.

Stand Area (ha)

It represents the total area of the stand measured in hectares, as per the geographical basis made available by the customer, see item 4.2. Registration of Maps Farm/ Stands.

6.1.6 Recommendation and Deviation

In the application of product resources with fixed rate, the map of recommendation can be inserted in the computer on board regarding the work recommendation. This information is used as a parameter to measure the deviation of the dosage applied related to the application recommended.

In the application of product resources with variable rate, the recommendation is inserted in the on-board computer and during the application of product resources considers the local recommendation indicated. In this case, the deviation is also calculated, considering the quantity applied related to the recommendation concerned.

The ideal situation is that the deviation for the area traveled and the area worked is as near as possible to 0%, where it can be concluded that there was no overlapping and the system was duly calibrated applying the quantity of product resources recommended.

Deviation of Area Worked (%)

It determines the difference between the total product resources applied in the area worked (kg/ ha) and the recommendation (kg/ha).

Deviation (%) = (1- <u>Product Resources/Area Worked (kg/ha)</u>) Recommendation (kg/ha) .100

Deviation of Area Traveled (%)

It determines the difference between the total product resources applied in the area traveled (kg/ ha) and the recommendation (kg/ha).

Deviation (%) = (<u>1- Product Resources/Area Traveled (kg/ha</u>)).100 Recommendation (kg/ha)

This is the parameter used in checking the quality of the operation, as the computer on-board corrects the dosage applied at each point related to the speed and width of work indicated by the operator.

For example, if the machine moved 2 meters and the width between lines is 3 meters, the quantity of product resources applied at this point must be equivalent to 6 m². This dosage is compared with the recommendation, thereby obtaining the deviation of the area traveled. If this machine goes over the same place upon another occasion, the same calculation is made, not ignoring the range overlapped in the determination of the product resources quantity to be applied.

Average speed (Km/h)

Every second the computer records points with operating data. One of the attributes recorded is the speed of the point georeferenced, obtained by the internal GPS of the on-board computer. The average work speed of the machines and operation in a determined stand is obtained through the average of the speeds of the productive points.

Average Speed (km/h) = $\sum (Speed . Productive Points)$ n . Productive Points

6.1.7 Average Depth (m)

Other data recorded in the on-board computer is the depth of the rod in the operation of preparing the soil when monitored with a depth gage. In dealing with the data, the average depth is obtained through the average of the depths of the productive points.

Depth (m) = $\sum (Depth, Productive Points)$ n.(Productive Points)

6.2 Mobile Asset Management

The reports of **mobile assets** correspond to the yield of the implements and machines, as well as the follow-up of the performance of providers, productive structures and execution of a determined activity.

6.2.1 Time Management

The **Time Management Report** allows the follow-up of the activities executed in a specific time interval relating them to different providers or different productive structures.

6.2.1.1 Study by Providers

This study allows the follow-up and comparison of the behavior of providers who render service to a determined producer, presenting graphs of area traveled by each provider, as well as the amount of equipment which worked, the operating field capacity, effective field capacity, effective field and overtime.

To execute the study by providers obey the following instructions:

- 5. In Producer choose the producer required,
- 6. In Period define the time interval,
- 7. In Grouping define the time scale,
- 8. In Activity select the activities required,
- 9. In Select select filter Providers,
- 10. In Providers select the providers required.

	Hexagon Agriculture	
Período	Útimos 30 dias Data Inicial 31/01/2016	Data Final 91/03/2016
Agrupamento	O Diário 🔍 Mensal 🔿 Anual	
Atividade*	1003 - Preparo De Solo Com Ferticeção E Profundimetro 1024 - Subsolgem Necalizada	*
Selecionar*	Provedores C Estruturas Produtivas	Limpar
Provedores	HX-AG - Provedor 1 + HX-AG - Provedor 2 HX-AG - Provedor 3	

Figure 29 - Time Management - Study by Providers

General Graphs

In graph Productive Area Traveled the area traveled in hectares by a determined provider can be viewed.







Figura 1 - Número de equipamentos em uso

Graphs by Machine Times

In the graph of Productive Area Traveled it is possible to view the area traveled by a provider in a determined period.



Figure 32 - Productive Area Traveled

This graph shows the Operating Field Capacity in hour hectares in a determined time period.



The graph Effective Field Capacity shows the capacity in hour hectares in a determined time period.



Figure 34 - Effective Field Capacity

This graph shows the Effective Field Yield as a percentage in a determined time period.



Figure 35 - Effective Field Yield

6.2.1.2 Study by productive unit

This study allows the follow-up and comparison of the performance of the activities executed in the productive units, comparing both units, regions, glebes, farms and a more detailed level as stands.

To execute a study by productive unit level proceed in the following manner:

- 1. In Producer choose the producer required,
- 2. In Period define the time interval,
- 3. In Grouping define the time scale,
- 4. In Activity select the activities required,
- 5. In Select select Productive Structures,
- 6. In Productive Structures select the Level required.

To make a study by productive unit at the level if stands ibn Productive Structures select the upper levels required and the stands required.

Periodo	specificar a data 🔹		Data Inicial*	31/01/2014		Data Final*	28/02/2014
Agrupamento* ®	Diário O Mensal O Anual						
Atividade*	00 - Soil Tilling					*	
						-	
					Limp	ar	
Selecionar*	Provedores ® Estruturas Pr	rodutivas					
Provedor	Test Provider •						
Estruturas Produtivas*	Projeto		Fazenda			Talhão	
	FAZENDA C		FAZENDA	С	🔺 Limpar	FAZ-C-0002	🔺 Limpar
						FAZ-C-0003	
						FAZ-C-0004 FAZ-C-0005	
		*			Ŧ		Ŧ
		Limpar					
scar							



For further information about graphs see item 6.2.1.1.

6.2.2 Shift Management Report

The **Shift Management** Report brings information of the times and yields of the machines in the field in the interval equivalent to the shift.

To issue a new Shift Management Report obey the following steps:

- 1. In Producer choose the producer required,
- In Provider, select the provider required;
- 3. In Period define the time interval,
- 4. In Activity select the activities required,
- 5. Select the **work shift**, to check the area worked in this time interval every day.

Turnos de Trabalho						
✓ Filtros						
Produtor *	Hexagon Agriculture	Provedor *	JFI-MS	Min. Trabalhado (ha) *	0.1	
Periodo	Últimos 30 dias 🗸	Data Inicial 🔺	20/02/2016	Data Final 🔺	21/03/2016	
Atividade *	1003 - Preparo de Solo com fer	Equipamento	Selecione 🗸	Turno *	08:00:00 - 16:00:00	•
Veiculo	Selecione 🗸					
Buscar						
 Gráficos Gerais 						
 Gráficos Por Equipament 	to					
 Gráficos Por Classificaçã 	io De Tempos					
 Dados Diários 						
 Classificação De Motivos 	De Tempo					

Figure 37 - Shift Management

General Graphs

This field displays the graphs of area worked, field capacity, operating times and average times.

In the graph of Area worked it is possible to view the area total, which is the sum of the area of all the equipment which worked, and the average of the areas worked of the equipment.

In graph Field Capacity the operating and effective field capacity are compared.

In graph Operating Times the times of the operating reasons occurred are viewed.

In graph Average Times the average of the operating and effective times is compared.



Figure 38 - General Graphs of the Area Worked



Figure 39 - General Graphs

Graphs by Equipment

This field displays the graphs of **Effective Time** which indicates the time that each machine effectively worked; **Worked Area** which indicates the daily production in hectares by machine; **Operating and Effective Field Capacity** which presents the production indicator in ha/h between the equipment.



Figure 40 - Graphs by Equipment

Graphs by Time Classification

This field displays the graphs of **Operating Times** in hours and percentage, detailing the time reasons indicated in the field during the operation.

The graph of **Operating Times by Hours** displays in hours the time reasons indicated daily.

The graph **Operating Times by Percentage** displays as a percentage the hours of the time reasons indicated daily.

The graph of **Classification of Time Reasons** displays the grouping of the hours of the time reasons indicated in the interval of days defined in the search filter.



Figure 41 - Graphs by Time Classification

Daily Data

In daily data there is a daily report of the machine performance status. It is possible to download the report in format .csv.

	Qtd. Área Fauin Percorrida		Horas de (loras de Trabalho (h)		Tempos										Eficiência	Capacidade de		Rendimento D		
Data 🗘	Equip.	Percorrida	Destinate	Discolation		Efetivo		D		Deed (b)	0	D		Deed (W)	Outros	Efet.	Não	Global (%)	Campo	(na/n)	de Campo
			Realizaua	Fianejaua	Min(h) ≎	Méd(h) 🗘	Máx(h) ≎	Prod.(ii)	AUX.(II)	reiu.(ii)	Outros(ii)	P100.(%)	AUX.(19)	reiu.(%)			(h)		Oper. ≎	Efet. 🗘	
20/02/2016	2	7,31	13,54	16	0,42	1,59	2,76	2,34	0,84	1,77	8,59	17,26	6,21	13,1	63,43	3,18	10,36	39,71	0,54	2,3	23,47
21/02/2016	1	0,9	1,84	8	0,45	0,45	0,45	0,35	0,1	0,01	1,38	18,97	5,56	0,53	74,95	0,45	1,39	5,64	0,49	1,99	24,52
22/02/2016	2	4,41	5,01	16	1,88	1,88	1,88	1,68	0,2	0,1	3,04	33,43	4,02	1,99	60,55	1,88	3,14	23,47	0,88	2,35	37,45
23/02/2016	2	7,1	6,45	16	0,43	1,88	3,33	2,59	1,17	0,84	1,86	40,16	18,08	12,98	28,78	3,75	2,69	46,93	1,1	1,89	58,24
24/02/2016	2	9,78	12,74	16	1,91	3,09	4,27	3,71	2,47	1,76	4,8	29,12	19,42	13,82	37,64	6,18	6,55	77,28	0,77	1,58	48,54
25/02/2016	2	15,16	12,33	16	2,77	3,09	3,41	4,55	1,63	1,84	4,32	36,86	13,22	14,93	34,99	6,18	6,16	77,21	1,23	2,45	50,08
26/02/2016	2	15,89	13,33	16	3,23	3,25	3,26	4,87	1,62	1,86	4,98	36,55	12,17	13,95	37,34	6,49	6,84	81,18	1,19	2,45	48,72
27/02/2016	2	13,79	13,82	16	1,16	2,8	4,44	3,96	1,64	3,65	4,55	28,69	11,9	26,44	32,96	5,61	8,21	70,11	1	2,46	40,6
28/02/2016	2	18,8	12,37	16	2,94	3,48	4,03	5,16	1,8	2,17	3,23	41,76	14,58	17,52	26,14	6,97	5,4	87,09	1,52	2,7	56,34
29/02/2016	2	7,29	11,59	16	0,54	1,59	2,63	2,34	0,83	1,71	6,71	20,2	7,15	14,75	57,9	3,17	8,42	39,63	0,63	2,3	27,35
01/03/2016	2	17,89	13,63	16	4,02	4,61	5,19	5,63	3,58	0,84	3,57	41,34	26,26	6,19	26,21	9,21	4,42	67,6	1,31	1,94	67,6
03/03/2016	2	13,75	10,62	16	1,86	2,9	3,95	4,55	1,26	1,26	3,55	42,88	11,83	11,85	33,44	5,81	4,81	72,62	1,3	2,37	54,71
04/03/2016	2	15,36	12,77	16	2,91	3	3,09	4,27	1,74	1,32	5,44	33,44	13,61	10,31	42,64	6,01	6,76	75,08	1,2	2,56	47,05
05/03/2016	2	11,58	11,81	16	1,98	2,61	3,23	3,32	1,89	2,82	3,78	28,07	16,04	23,85	32,04	5,21	6,6	65,13	0,98	2,22	44,11
06/03/2016	2	20,58	14,29	16	4,16	4,37	4,59	6,06	2,69	2,22	3,33	42,38	18,84	15,51	23,28	8,75	5,54	61,21	1,44	2,35	61,21
Total		179,59						55,38	23,47	24.16	63.12								1.04	2.26	

Figure 42 - Daily Data

Classification of Time Reasons

This table describes the time reasons in hours occurring in a defined time

			int	erval														
Classificação	De Motiv	os De Te	тро															
Mostra	ar todos os	Motivos	de Tempo															
			oc rempo								Motivos de Tempo	(b)						
Data	Manobra	Abast. insumo.	Manut. eletr.mec.	Mudanca climatica	Desloc trajet.	Manut. corret. (maq.)	Desloc. /talh./ proj./ faz.	Nao informado	Manut. implemento	Prepara maq.	Refeic/almoco/cafe	Abast. combustivel	Afericao de qualidade	Calibracao	Falta insumo	Manut. sistema arvus	Nec. pessoal	Manut.preve
20/02/2016	0,56	0,14	0	0,31	1,1	8,11	0,28	0,7										
21/02/2016	0,06	0,34				0,9		0,05	0,13									
22/02/2016	0,12	0,12				0,64		0,19		0,44	1,83							
23/02/2016	1	0,49			0,67			0,33			1,18	0,2						
24/02/2016	2,07	0,59	0		0,93	1,36		1,27	0.02	0,58	2,11		0	0,1				
25/02/2016	0,66	0,55			0,83			1,99		0,23	3,12	0,41						
26/02/2016	0,76	0,74			0,28			2,45	2,35	0,3	1,45				0,13			
27/02/2016	1,11	0,73			2,96		0,15	1,08	3,6			0,21						
28/02/2016	1,01	1,29			0,96		0,08	1,93								1,94		
29/02/2016	0,61	0,36		0,01	1,07	4,22		0,9	0,93	0	0,79	0,25					0,02	0,09
01/03/2016	3,13	1,03			0,55	1,46		0,75		0,65	0,42							
02/03/2016																		
03/03/2016	0,84	0,27			0,99	0,85		0,71		0,12	0,84				0,89			0,58
04/03/2016	0,65	0,58			0,1		0,34	1,97	0,93	0,96	2,49	0,19			0,29			
05/03/2016	1,04	0,55			2,2			1,47			2,87	0,37						
06/03/2016	1,65	1,44			0,61		0,01	2,66			1,62	0,07						0,17
Total	15,27	9,22	0	0,31	13,24	17,54	0,86	18,46	7,97	3,28	18,7	1,7	0	0,1	1,32	1,94	0,02	0,82

Figure 43 - Classification of Time Reasons

6.2.3 Machine Time Report

The Machines Report, present in Reports - Mobile Assets Management - Machines, brings daily information of the times and yields of the machines in the field generally speaking or by equipment.

To issue a new Machine Time Report execute the following steps:

- In Producer choose the producer required; 1.
- 2. Select the Provider:
- 3 In Period define the time interval under 31 days;
- 4. In Activity select the activity required,
- 5 Click on Generate Report.

IMPORTANT

The graphs presented are similar to shift management differing only regarding the grouped time interval, which in this case is the total of the area worked per day (0h to 11:59pm). For further information see item 6.2.3

6.2.4 **Daily Work and Consumption**

This report is based upon analyses of times and activities versus fuel consumption, allowing the user to follow up fuel expense per activity executed.

To issue the report, execute the following steps:

- 1. In Producer choose the producer required,
- 2 In **Provider** choose the provider required.
- 3. In **Period** define the time interval,
- 4 In Activity select the activity required. It is possible to select more than one activity.
- Click on Search to show the study. 5.

This table allows the user to follow up the consumption per area traveled and the time reasons.

								etalhes	por Data								
Data	Área Percorrida	Combustivel	Horas de trabalho (h)		Hora			Tempo	is (h)			Eficiência	Cap Car	acidade de npo (ha/h)	Disponibilidade	Consumo	Consumo
Unite	(ha)	Total (L)	Realizada	Planejada	Extra (h)	Produtivo	Auxiliar	Outros	Perdido	Efetivo	Não Efetivo	Global (%)	Efetivo	Operacional	Operacional (%)	L/ha	L/h
13/02/2014	1,60	1.000,00	11,37	17,60	0,00	0,63	0,38	9,74	0,62	1,01	10,36	5,74	1,58	0,14	14,34	0,00	0,00
14/02/2014	1,80	0,00	18,35	17,60	5,30	0,64	0,22	17,32	0,17	0,86	17,48	4,70	2,08	0,10	5,60	0,00	0,00
15/02/2014	0,00	0,00	16,75	8,80	7,95	0,00	0,01	16,40	0,33	0,01	16,74	0,08	0,12	0,00	2,07	0,00	0,00
17/02/2014	0,00	0,00	13,27	17,60	4,46	0,00	0,00	13,15	0,12	0,00	13,27	0,00	0,00	0,00	0,89	0,00	0,00
18/02/2014	8,94	0,00	25,37	17,60	8,25	3,54	1,02	19,23	1,58	4,56	20,81	17,97	1,96	0,35	24,20	0,00	0,00
19/02/2014	6,18	258,00	18,02	17,60	0,42	2,47	0,48	12,12	2,95	2,95	15,07	16,37	2,09	0,34	32,73	33,18	52,90
20/02/2014	12,21	0,00	24,21	17,60	6,63	4,81	0,97	17,08	1,33	5,79	18,41	23,90	2,11	0,50	29,38	0,00	0,00
21/02/2014	9,37	0,00	25,75	17,60	8,58	3,72	0,69	19,83	1,51	4,41	21,33	17,14	2,12	0,36	22,99	0,00	0,00
22/02/2014	7,29	364,00	17,38	17,60	0,08	2,67	0,80	12,46	1,45	3,47	13,91	19,70	2,10	0,42	28,29	69,25	103,59
24/02/2014	9,41	154,00	17,28	17,60	0,00	3,67	1,34	11,02	1,25	5,01	12,27	28,45	1,88	0,54	36,21	13,45	21,68
25/02/2014	2,41	0,00	16,16	17,60	0,00	0,90	0,46	13,50	1,30	1,36	14,80	7,71	1,77	0,15	16,42	0,00	0,00
26/02/2014	8,80	64,00	12,26	17,60	0,00	3,31	0,87	7,21	0,84	4,18	8,06	23,76	2,10	0,72	41,00	50,67	91,94
27/02/2014	12,18	109,00	16,80	17,60	0,00	4,58	1,25	9,19	1,79	5,83	10,98	33,12	2,09	0,72	45,34	13,67	23,69
28/02/2014	10,26	0,00	17,76	17,60	0,16	3,85	1,21	9,74	2,95	5,08	12,70	28,51	2,03	0,58	45,15	0,00	0,00
Table	00.45	1.010.00	050 70	007.00	11.05	24.04	0.70	100.00	10.10	44.50	200.40	47.75	0.00	0.00	25.00	672.04	00.74

Figura 2 - Acompanhamento do consumo por área percorrida e os motivos de tempos

Right below the table, there are the graphs of **Activity** which represents the area worked in hectares per activity in the time period specified, the graph of accumulated fuel consumption in the time period specified, the graph of global efficiency and operating availability, graph of Work hours which compares the planned work hours with the work hours executed



Study by On-Board Computer

Choose the on-board computer clicking on one of the tabs

Computador De Bordo: 0002F2200

Computador De Bordo: 0003F2200

Figure 46 - Tabs of On-Board Computer

This table allows the follow-up by on-board computer of the consumption by area traveled and the time reasons and fuel supply events.

								De	talhes por	Data								
Data	Área Percorrida	Combustivel	Horimetro Hora	Hora	Jornada d (le Trabalho h)	Hora			Temp	os (h)			Eficiência	Cap Car	acidade de npo (ha/h)	Disponibilidade	
Uutu	(ha)	Diário (L)		Inicial	Final	Realizada	Planejada	(h)	Produtivo	Auxiliar	Perdido	Outros	Efetivo	Não Efetivo	Global (%)	Efetivo	Operacional	Operacional (%)
19/04/2016	2,59	0,00	2.604	14:22	19:01	4,65	9,80	0,00	1,99	2,15	0,34	0,16	4,15	0,50	42,35	0,62	0,56	92,69
20/04/2016	6,87	231,00	2.611	07:05	18:47	11,70	9,80	1,90	4,87	6,20	0,29	0,35	11,07	0,63	94,62	0,62	0,59	97,61
21/04/2016	4,95	0,00	2.611	07:16	18:58	11,69	9,80	1,89	3,79	5,92	0,14	1,84	9,71	1,99	83,06	0,51	0,42	98,80
22/04/2016	3,46	0,00	2.611	07:13	18:27	11,23	9,80	1,43	2,48	4,77	0,10	3,88	7,25	3,97	64,56	0,48	0,31	99,11
23/04/2016	2,90	0,00	2.611	12:54	18:51	5,96	9,80	0,00	2,38	3,09	0,07	0,43	5,46	0,50	55,71	0,53	0,49	98,83
24/04/2016	2,70	0,00	2.611	07:20	16:22	9,03	9,80	0,00	2,08	6,38	0,47	0,10	8,47	0,57	86,43	0,32	0,30	94,91
25/04/2016	0,71	195,00	2.649	07:07	13:57	6,82	9,80	0,00	0,54	5,94	0,25	0,09	6,48	0,34	66,12	0,11	0,10	96,33
27/04/2016	1,93	0,00	2.655	08:03	16:45	8,71	9,80	0,00	1,72	3,42	0,36	3,20	5,15	3,56	52,55	0,37	0,22	95,87
28/04/2016	0,19	0,00	2.661	08:03	16:04	8,02	9,80	0,00	0,18	1,95	4,35	1,54	2,13	5,89	21,74	0,09	0,02	45,76
29/04/2016	2,81	0,00	2.663	07:18	16:20	9,02	9,80	0,00	2,70	3,67	0,97	1,68	6,37	2,65	65,00	0,44	0,31	89,25
30/04/2016	3,85	0,00	2.663	07:38	16:17	8,65	9,80	0,00	3,72	4,01	0,37	0,55	7,73	0,92	78,88	0,50	0,45	95,72
02/05/2016	2,92	0,00	2.679	07:33	16:22	8,82	9,80	0,00	2,71	2,96	1,40	1,75	5,67	3,15	57,86	0,51	0,33	84,13
03/05/2016	4,09	0,00	2.679	07:36	16:12	8,59	9,80	0,00	3,62	4,51	0,43	0,04	8,12	0,47	82,86	0,50	0,48	94,99
04/05/2016	5,85	0,00	2.679	07:11	16:41	9,50	9,80	0,00	4,65	4,41	0,41	0,03	9,06	0,44	92,45	0,65	0,62	95,68
05/05/2016	3,41	0,00	2.700	07:06	13:32	6,42	9,80	0,00	2,81	3,27	0,25	0,09	6,08	0,34	62,04	0,56	0,53	96,11
Total	49,23	426,00				128,81	147,00	5,22	40,24	62,65	15,73	10,20	102,90	25,92	70,00	0,48	0,38	92,10

Figure 47 - Table of Consumption per Area Traveled and Time Reasons and Fuel Supply Events.

The following graphs are displayed for analysis by on-board computer:

- Activities, showing the area worked per activity in a specific time
- period;
- Accumulated fuel consumption in the period specified;
- Machine hour meter;
- Global efficiency and operating availability;
- Daily work, where the start Time line shows the work start time and the end Time line shows the end of the day's work.



Figure 48 - Graphs of Activity and Accumulated Fuel Consumption



Figure 49 - Graphs of Hour Meter, Global Efficiency and Operating Availability and Daily Work.

When there are indications of the quantity of fuel supplied in the field the following table and graphs are displayed:

- Fuel consumption per hectare;
- Fuel consumption per hour.

			Eventos				
	Ároa (ba)				Consumo		
Uata	Area (na)	Compusiver rotal (L)	rempo em movimento (n)	noniniedo (n)	Realizado (L/ha)	Realizado (L/h)	
20/04/2016 12:13:23	2,23	231,00	2,81	2.611	103,39	82,18	
25/04/2016 07:15:46	0,00	195,00	0,00	2.649	0,00	0,00	
	2,23	426,00	2,81		190,67	151,54	
23104201001-10.40	2,23	426,00	2,81	2.045	190,67	151,54	
Baixar em CSV							

Figure 50 - Table of Fuel Consumption



Figure 51 - Graph of Fuel Consumption

6.3 Quality Management

The calibrations are extremely important for the correct functioning of the Hexagon Agriculture Systems, as it is through the calibration that the system manages to make the correct application of the recommended dosage.

The calibration must be done in the following conditions:

- whenever the manure formula or lot is modified;
- whenever the appearance (color, consistency, granulometry) of the manure is different;
- whenever there is a climate change (humidity or dryness);
- · when the machines are stopped and return to work;
- when the manure is stored for some days and taken to the field afterwards;
- when mechanical adjustments are made to the machine or in the on-board computer.

In the quality management module it is possible to generate calibration reports of Titanium, TXF and quality management.

6.3.1 Titanium Calibrations

For analysis of the Titanium calibrations executed in the on-board computers it is possible to generate the calibrations report which will indicate the number of calibrations per equipment, the area, the values of the calibrations, the area where the operator worked with each calibration per on-board computer and the values of calibration equipment.

IMPORTANT Generally speaking at least 2 daily calibrations are expected, on being before the start of the day's work and the other after the stoppage for lunch.

To generate this report, proceed in the following manner:

- 1. Enter with information of the producer, provider, activity and period. It is also possible to filter by region, project and glebe.
- 2. Click on Search.

A graph will appear which displays the number of calibrations per equipment. In this case we have three items of equipment for this provider.



Número de Calibrações por Equip.

Figure 52 - Number of Calibrations per Equipment

The values of the calibrations are supplied in the rotation/turn unit. For the same unit of tractor, implement, activity and product resource, it is expected that the values of the calibrations are near, as they indicate that the calibration is correct.



Figure 53 - Evolution of Calibrations

Choose the on-board computer clicking on one of the tabs



Figure 54 - Area per Calibration

This graph shows the area that the operator worked with each calibration and how many calibrations were executed during the day. When red it indicates that there was no calibration.

The following graph shows the calibration values (g/turn of the engine). In a single item of equipment, we can observe how uniform the values are. Ideally there should be little variation, as it concerns the same machine. Such variations can occur due to the variation of the product resource.





The information is also presented in tables. This table shows the calibration events of the product resources controller, where X represents the period in which there was work without calibration, while V indicates that there was work with calibration.

	Data	Inicío (h)	Fim (h)	Duração (h)	Área Percorrida Prod. (ha)	Calibração (g/volta)
1	04/02/2016	16:00:24	18:56:03	02:55:39	1,84	70,00
×	05/02/2016	10:50:11	16:42:03	05:51:52	0,29	70,00
1	08/02/2016	12:01:40	13:42:58	01:41:18	2,14	67,00
×	10/02/2016	13:44:20	18:38:05	04:53:45	1,95	67,00
×	11/02/2016	10:19:58	11:28:20	01:08:22	1,10	67,00
1	11/02/2016	11:37:10	18:21:43	06:44:33	2,47	68,00
1	16/02/2016	13:01:11	15:05:54	02:04:43	0,46	77,00

Figure 56 - Table of Calibration Events

6.3.2 TxF Calibrations

To analyze the calibrations executed in TxFs it is possible to generate the calibrations report which will indicate the number of calibrations per day, the values of the calibrations, the area where the operator worked with each calibration per on-board computer and the values of the calibration per equipment.

To do the report obey the following steps:

- 1. In Producer choose the producer required,
- 2. In Provider select the providers required,
- 3. In Period define the time interval,
- 4. In Type select Product Resources or Pneumofathometer,
- 5. In Activity select the activities required.

➡ Filtros						
Produtor *	Test Producer	Provedor *	Test Provider	•		
Periodo	Especificar a data	Data Inicial *	17/02/2014		Data Final *	28/02/2014
Projeto	Selecione	 Fazenda 	Selecione	•	Talhão	
Tipo *	Insumo O Profundimet	tro				
Atividade *	100 - Soil Tiling			Limpar		
				Limpar		
Buscar						

Figure 57 - TXF Calibration Report

6.3.1.1 Product Resource Type TXF Calibrations

The following graphs are displayed for the generation of TXF reports with the calibration of product resource type:

Number of calibrations per equipment.



Calibration events.

Figure 58 - Product Resource TxF Calibration General Graphs

Graphs per TXF

Area Traveled per day shows the area where the operator worked with each calibration.



Calibration events.

The information is also displayed in tables. This table shows the calibration events of the product resources controller, where X represents the period where there was work without calibration while V indicates that there was work with calibration. It considers as not calibrated when there is change of day or product resource, events for which the calibration of the system is recommended.

					Eventos				
	Data	Hora Inicial (h)	Hora Final (h)	Duração (H:m)	Área Percorrida (ha)	Talhão	Insumo	Recomendação	Calibração (g/volta)
X	18/02/2014	00:00	15:32	15:32	2,64	FAZ-C-0002	NPK 08-30-08	500,00	0,00
1	18/02/2014	15:38	17:03	01:28	0,22	FAZ-C-0002	NPK 08-30-08	500,00	80,00
X	19/02/2014	08:41	17:50	09:09	2,52	FAZ-C-0002	NPK 08-30-08	500,00	0,00
×	21/02/2014	00:00	14:52	14:52	2,12	FAZ-C-0002	NPK 08-30-08	500,00	87,00
1	21/02/2014	14:58	17:22	02:28	1,99	FAZ-C-0002	NPK 08-30-08	500,00	97,00
×	22/02/2014	08:38	16:46	08:07	3,61	FAZ-C-0002	NPK 08-30-08	500,00	87,00
1	22/02/2014	16:46	16:47	00:01	0,00	FAZ-C-005A	NPK 08-30-08	500,00	108,00
1	22/02/2014	16:47	17:03	00:15	0,58	FAZ-C-0002	NPK 08-30-08	500,00	108,00
1	22/02/2014	17:03	17:31	00:27	0,00	FAZ-C-005A	NPK 08-30-08	500,00	108,00
×	24/02/2014	08:54	16:28	07:33	4,03	FAZ-C-0002	NPK 08-30-08	500,00	108,00
1	24/02/2014	16:29	17:32	01:02	0,09	FAZ-C-0002	NPK 08-30-08	500,00	88,00
×	26/02/2014	09:09	11:03	01:53	0,21	FAZ-C-0003	NPK 08-30-08	500,00	108,00
X	28/02/2014	11:03	13:41	02:38	1,81	FAZ-C-0003	NPK 08-30-08	500,00	87,00
1	28/02/2014	13:41	13:42	00:00	0,00	FAZ-C-0004	NPK 08-30-08	500,00	93,00
1	26/02/2014	13:42	14:48	01:05	1,60	FAZ-C-0003	NPK 08-30-08	500,00	93,00
1	26/02/2014	14:49	15:08	00:19	0,84	FAZ-C-0003	NPK 08-30-08	500,00	94,00
1	28/02/2014	15:08	15:17	00:08	0,00	FAZ-C-0004	NPK 08-30-08	500,00	94,00
×	27/02/2014	09:08	10:31	01:24	1,71	FAZ-C-0003	NPK 08-30-08	500,00	94,00
1	27/02/2014	10:31	10:31	00:00	0,00	FAZ-C-0004	NPK 08-30-08	500,00	95,00
1	27/02/2014	10:32	10:48	00:14	0,45	FAZ-C-0003	NPK 08-30-08	500,00	95,00
1	27/02/2014	10:48	10:51	00:05	0,00	FAZ-C-0004	NPK 08-30-08	500,00	95,00
1	27/02/2014	10:51	10:55	00:03	0,08	FAZ-C-0003	NPK 08-30-08	500,00	95,00
1	27/02/2014	10:55	10:55	00:00	0,00	FAZ-C-0004	NPK 08-30-08	500,00	95,00
1	27/02/2014	10:55	10:57	00:02	0,05	FAZ-C-0003	NPK 08-30-08	500,00	95,00
1	27/02/2014	10:57	10:58	00:00	0,00	FAZ-C-0004	NPK 08-30-08	500,00	95,00
1	27/02/2014	10:58	13:58	03:00	0,59	FAZ-C-0003	NPK 08-30-08	500,00	95,00
1	27/02/2014	14:00	14:08	00:08	0,15	FAZ-C-0003	NPK 08-30-08	500,00	93,00
1	27/02/2014	14:08	14:09	00:00	0,02	FAZ-C-0004	NPK 08-30-08	500,00	93,00
1	27/02/2014	14:09	16:00	01:50	1,75	FAZ-C-0003	NPK 08-30-08	500,00	93,00
1	27/02/2014	16:03	17:20	01:17	1.24	FAZ-C-0003	NPK 08-30-08	500.00	91.00

It is possible to export the table in CSV clicking on button Download CSV.

Figure 59 - Graphs per TxF

6.3.1.2 **Pneumofathometer Type Calibrations**

The pneumofathometer calibration consists of two stages, first zero depth is obtained with the rod on the soil and then this depth is recorded by the computer in degrees. Then the rod is inserted in the soil at the recommended depth and the computer records delta depth in degrees. From this operation the Hexagon Agriculture system calibrates the work depth for the depth value recommended in centimeters by the variation of the angle read by the drivers.

Both the zero depth and the delta depth can be negative depending upon the positioning of the machine/implement and the drives.

In SWS the data is dealt with showing the number of calibrations per equipment occurring during a day's work, the area worked in each calibration, as well as the values resulting from the calibration (g/turn).



Figure 61 - General Graphs of Pneumofathometer TxF Calibration

In the graph by on-board computer it is possible to view the area where the on-board computer worked calibrated. The other bars indicate the number of calibrations.



Figure 62 - Area Traveled per Day

In the graph of calibration events per on-board computer it is possible to view the calibration values (degrees). In a single piece of equipment, we can observe how uniform the values are.





The table below shows the pneumofathometer calibration events, where X represents the period where there was work without calibration while V indicates that there was work with calibration.

					Eventos				
	Data	Hora Inicial (h)	Hora Final (h)	Duração (H:m)	Área Percorrida (ha)	Insumo	Recomendação (m)	Prof. Zero(")	Prof. Delta (*)
×	06/04/2016	06:24	10:50	04:25	2,26	NPK 10-22-14	0,70	-83,08	-0,17
× -	07/04/2016	06:50	16:42	09:51	5,24	NPK 10-22-14	0,70	-82,05	-0,16
۵.	08/04/2016	06:13	06:14	00:00	0,00	NPK 10-22-14	0,70	0,00	0,00
× -	08/04/2016	06:19	13:09	06:50	6,40	NPK 10-22-14	0,70	-84,00	-0,18
×	11/04/2016	06:46	13:47	07:01	5,21	NPK 10-22-14	0,70	-85,26	-0,13
I Daio	ar on CSV								

Figure 64 - Pneumofathometer Calibration Events

6.3.2 Quality Management Reports

The **Quality Management Report** allows an overview of the calibration statuses per providers or productive structures for management analyses.

To do the report obey the following steps:

- 1. In Producer choose the producer required;
- 2. In Period define the time interval;
- 3. Choose the means of grouping as daily, monthly or annual;
- In Activity select the activities required;
- 5. Select providers or productive structures;
- 6. Select one or more providers for the provider type.
- 7. For the productive structures type choose the provider and then execute
- 8. the filter by region, project, municipality and stand.

6.3.2.1 Application Deviation Graphs

In the graphs of deviation of application it is possible to check as a percentage the application deviation in the area executed in the period chosen (grouped by day, month or year), by providers and by activity. The deviation is considered to be 5%.



6.3.3.2 **Depth Graphs**

In the depth graphs it is possible to check as a percentage of the area executed in each depth range monitored in the subsoil within the period chosen (grouped by day, month or year), by providers and by activity.



Figure 66 - Depth Graphs - 1



Figura 4 - Figure 67 - Depth Graphs - 2

6.3.3.3 Noncompliance Graphs

In the noncompliance graphs it is possible to check in greater detail the occurrences of area of stands with area executed without calibration, with average deviations outside the acceptable range (+-5%) and stands with more than one recommendation for the same activity.



Figure 68 - Noncompliance Graphs

6.4 Operating Management Report

6.4.1 Productive Structure Management

The Productive Structure Management Report in the Operating Management module provides the follow-up of the activities executed in the field, allowing the user a spatial and graphical view of operating performance.

To generate the **Productive Structure Management Report** proceed in the following manner:

- 1. Enter the Reports module Operating Management **Productive Structure Management.**
- 2. Enter with the search filter information provider, project, stand code, minimum status of the area worked, start and end period of the operation and activity.
- 3. Click on Search for a list of stands to be displayed.

Produtor *	Selecione	Data Inicial	Data Final	
Provedor	Selecione	Até	Até	
Atividade	Selecione	Status Min. (%) 30		
Apontamento Status Cliente	Selecione	Min. Trabalhado (ha) 1		
Buscar				

Figure 69 - Product Structure Management

6.4.1.1 Export table .CSV

To export the table in format .CSV click on button Export.

In the report generated information is available of stand ID as well as information of the activities executed as:

Speed (km/h): It considers the average speed of movement of the machine when in productive mode, i.e., executing the operation.

Actual Spacing (m): It considers the actual spacing between lines, once

having the area worked and the productive distance traveled.

Recommended Spacing (m): Spacing indicated in the on-board computer by the operator. When more than one spacing is indicated, the weighted average for the productive area is indicated.

Average Depth (m): It presents the average depth of the subsoil monitored, when it is effectively executing the operation.

Yield indicators **Operating Field Capacity, Effective Field Capacity, Effective Field Yield, Operating Availability: see report Mobile Assets Report.**

Fertilizers: Indication of product resources specified by the operator in the onboard computer.

Area Worked: It takes into account standards of concentration of points to calculate the area covered and it is stronger and less liable to errors related to variations between distance between rated and actual lines. The area is estimated from a set of application points and a radius of action for each point, this radius of action being related to the distance between rated lines.

Area Traveled: It is the product of the distance traveled by the tractor and the distance between lines specified by the operator in the on-board computer.

Status: Area worked related to the total area of the stand.

Total Product Resources: quantity of product resource applied in all the area worked.

Product Resources /Productive Area: relação da quantidade de insumo pela área trabalhada.

Product Resources /Area Traveled: relação da quantidade de insumo pela área percorrida.

Recommendation: dosagem informada no computador de bordo.

Linear Deviation: diferença da quantidade de de insumo aplicado por área percorrida em relação à recomendação.

Productive Time: Quantity of hours where the machine is effectively working with application of product resources and executing subsoiling

Auxiliary Time: Time allocated basically to maneuvers and other auxiliary movements during the activity.

Time Lost: Constituted mainly by the movement of the tractor.

Outros Tempos: Classified as stoppage time for lunch, maintenance,

training, supply, etc.

6.4.1.2 Export table .SHP

To export the points in format shapefile click on the green arrow beside the Stand required.

Асоп	ipan	ihar	nento													
୍ ଦ ।	ege	enda	IS									(10 🗸	14 (4	1 - 10 de 41	14 KI
			Produtor	Provedor	Fazenda	Talhão	Área (ha)	Área Trabalhada (ha)	Status (%)	Alividade	Inicio	Fim	Aprovado	Pendente	Não Apontado	Competencia
	۲	-	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0005	43,11	42,23	97.96	Preparo de Solo com fertilização e profundimetro	07/02/2016	08/03/2016	0,00	97,92	0,05	
	۲	÷	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0012	22,94	18,49	80.61	Preparo de Solo com fertilização e profundimetro	07/03/2016	08/03/2016	0,00	0,00	80,62	
	1	-	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0011	39,31	24,27	61.73	Preparo de Solo com fertilização e profundímetro	04/03/2016	07/03/2016	0,00	0,00	61,74	
	1	÷	HX-AG	Hexagon 2	Fazenda 3	HXXXXX-237A	40,32	29,81	73.92	Preparo de Solo com fertilização e profundimetro	05/03/2016	06/03/2016	0,00	73,93	0,00	
	۲	-	HX-AG	Hexagon 2	Fazenda 3	HXXXXX-0008	40,71	40,05	98.38	Preparo de Solo com fertilização e profundimetro	03/03/2016	06/03/2016	0,00	56,37	42,00	
	1	-	HX-AG	Hexagon 2	Fazenda 2	HXXXXX-0239	66,41	64,67	97.37	Preparo de Solo com fertilização e profundímetro	26/02/2016	05/03/2016	0,00	97,37	0,00	
		-	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0010	21,86	12,10	55.38	Preparo de Solo com fertilização e profundimetro	03/03/2016	04/03/2016	0,00	0,00	55,36	
	۲	÷	HX-AG	Hexagon 2	Fazenda 2	HXXXXX-0009	29,28	27,61	94.27	Preparo de Solo com fertilização e profundimetro	29/02/2016	03/03/2016	0,00	35,72	58,57	
	1	-	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0009	40,68	32,72	80.43	Preparo de Solo com fertilização e profundímetro	01/03/2016	03/03/2016	0,00	0,00	80,44	
	1	÷	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0008	43,16	37,85	87.71	Preparo de Solo com fertilização e profundimetro	25/02/2016	01/03/2016	0,00	0,00	87,71	
												C	10 🗸	14 (4	1 - 10 de 41	P> PI

Figure 70 - Export Table . SHP

To export shapefiles in batch, select the files required in the checkbox and click on **Generate maps**.

			Produtor	Provedor	Fazenda	Talhão	Área (ha)	Área Trabalhada (ha)	Status (%)	Alividade	Início		Aprovado	Pendente	Não Apontado	Competen
	9	٠	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0005	43,11	42,23	97.96	Preparo de Solo com fertilização e profundimetro	07/02/2016	08/03/2016	0,00	97,92	0,05	
	9	÷	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0012	22,94	18,49	80.61	Preparo de Solo com fertilização e profundimetro	07/03/2016	08/03/2016	0,00	0,00	80,62	
	9	÷	HX-AG	Hexagon 1	Fazenda 1	H00000X-0011	39,31	24,27	61.73	Preparo de Solo com fertilização e profundimetro	04/03/2016	07/03/2016	0,00	0,00	61,74	
	9	÷	HX-AG	Hexagon 2	Fazenda 3	HXXXXX-237A	40,32	29,81	73.92	Preparo de Solo com fertilização e profundimetro	05/03/2016	06/03/2016	0,00	73,93	0,00	
1	9	÷	HX-AG	Hexagon 2	Fazenda 3	HXXXXX-0008	40,71	40,05	98.38	Preparo de Solo com fertilização e profundímetro	03/03/2016	06/03/2016	0,00	56,37	42,00	
	9	÷	HX-AG	Hexagon 2	Fazenda 2	HXXXXX-0239	66,41	64,67	97.37	Preparo de Solo com fertilização e profundímetro	26/02/2016	05/03/2016	0,00	97,37	0,00	
1	9	÷	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0010	21,86	12,10	55.38	Preparo de Solo com fertilização e profundimetro	03/03/2016	04/03/2016	0,00	0,00	55,36	
	9	÷	HX-AG	Hexagon 2	Fazenda 2	HXXXXX-0009	29,28	27,61	94.27	Preparo de Solo com fertilização e profundimetro	29/02/2016	03/03/2016	0,00	35,72	58,57	
	9	÷	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0009	40,68	32,72	80.43	Preparo de Solo com fertilização e profundimetro	01/03/2016	03/03/2016	0,00	0,00	80,44	
1	9	÷	HX-AG	Hexagon 1	Fazenda 1	HXXXXX-0008	43,16	37,85	87.71	Preparo de Solo com fertilização e profundimetro	25/02/2016	01/03/2016	0,00	0,00	87,71	

Figure 71 - Export of Shapefiles in Batch

In Filename choose a name for the file with the shapefiles selected in Description and specify the file description.

Gerar Mapas		×
Nome do Arquivo: *	ARQUIVOS Arquivos para download.	
Descrição: *	Ok Cancelar	

Figure 72 – Generate Maps

A link will be sent to the user's email to download the file.

Gestão Operacional - download de mapas
O arquivo ARQUIVOS está disponível para download.
Para efetuar o download clique aqui: Download ou
cole o endereço http://50.97.132.98/sws/pages/monitoring/farmland-plat-progress/downloadShapes.jsf?idTask=51 no seu navegador.
nportantell
) arquivo estará disponível para download por uma semana, a partir da data de envio desta mensagem.

Figure 73 - File Dispatch

On menu Tools Go to the Download Area

	Ultimo talhão	Fichas de Atendimento	55 AI
ersão do SWS da Arvus Tecnologia.	MACK S	Área de Download	
lizada, buscamos oferecer um ambiente mais sabilidade e que atenda às necessidades de	PRO 5- 106 - F	RDSA	100 H
	ersão do SWS da Arvus Tecnologia. lizada, buscamos oferecer um ambiente mais sabildade e que atenda às necessidades de ra.	ersão do SWS da Arvus Teonologia lizada, buscamos oferecer um ambiente mais sabiláade e que atenda ás necessidades de a.	ersão do SWS da Arvus Tecnologia. Iizada, buscamos oferecer um ambiente mais sabilidade que atenda às necessidades de a.

Figure 74 -Download Area

The Download Area screen allows the user to download the file created clicking on the corresponding icon.

_									
iltros									
Nome arquivo			Descrição						
Perí. criação	Últimos 5 dias	•	Data Inicial	30/08/2014		Data Final	04/09/2014		
Peri. atualização	Selecione	•	Data Inicial			Data Final			
Buscar									
								14 (4	1
Nom	e arquivo	Descrição			Data de criação		Data ultima atualização		
	UIVOS	Arquivos pr	ara download		04/09/2014		04/09/2014		

Figure 75 - Download Area

6.4.1.3 Maps and Information per Stand

The maps are available in the icon present in the first column of the list of stands resulting from the filter applied. After a click on button "maps", a window opens with the maps available for viewing.

	Mapas					
	Arquivos			Data Inicial		
	Área Trabalhada		•		De	
	Calibração		•		Até	
	Classificação de Tempos por Equipamento					
	Classificação de Tempos por Talhão		•	Faze	nda 🗄	34
	Data			Status Min	1 50 6	
	Desvio Linear					
	Distância entrelinhas					
	Dosagem		 Min. T 	rabalhado	(ha) 1	
	Equipamentos					
	Pontos	Exp.	ortar Apontam	entos		
- 1	Profundidade			_		
_	Recomendação					
Acom	Velocidade					
- -	Sensor de Adubo - Grupo 1					
	Sensor de Adubo - Grupo 2	18	Tahāo	Área (ha)	År ta Ti	at
	🖉 👎 Test Producer Test Provider FAZE	NDAD	FAZ-D-00027	44,54		7
	A Test Brochurger Test Brouider 5479		E47 D 00007	44.54		

Upon choosing one of the map options available, a new window is opened, with the following follow-up header:



Certain pages of the Web may be blocked by the pop-up of the navigator. In this case, it is necessary to unblock it for portal SWS and click to open the map again

Produtor : Hexagon Agriculture	Provedor : Florianópolis	
Fazenda : FAZENDA 1	Talhão : XXXXXX-0001	
Atividade : Preparo de Solo Mecânico		
 Áreas e Insumos 		Período : 23/04/2016 - 24/04/2016
Área do Talhão (ha) : 10,66	Insumo Total (kg) : 2.001	
Área Trabalhada (ha) : 6,65	Insumo/Área Trabalhada (kg/ha) : 301	Status : 62,3%
Área Percorrida (ha) : 5,87	Insumo/Área Percorrida (kg/ha) : 341	Profundidade Média (m) : 0,48
Distância Percorrida(m) : 19.554,31	Desvio : 3,39% (330 kg/ha)	Velocidade Média (km/h) : 4,4
Estimativa de Mudas		Fertilizantes : NPK 06-30-06 NPK 20-05-20
Entre Mudas(m): 2	Estimativa por Área do Talhão: 17.770 mudas (1.667 Mudas/ha)	Recomendação (kg/ha) :330 (99%)
Entre Linhas (média ponderada)(m): 3	Estimativa por Área Percorrida : 9.777 mudas (1.666 Mudas/ha)	
Entre Linhas Real(m): 3,4		



Area 01

ID information of stand/farm and activity executed.

Area 02

Information referring to the area executed and the product resources applied.

Area 03

Based upon the area executed and the spacings preconfigured, the system indicates estimates of the quantity of seedlings required for the area prepared for the planting.

The distance between lines (weighted average) considers the width indicated in the on-board computer and weighted by the area referring to each value.

The actual distance between lines is obtained through the area worked and productive distance traveled.

Actual between lines (m) = <u>Area Worked (m)</u>

Distance Traveled (m)

Area 04

Period: Start and end date of the activity executed in this stand. Status: Percentage of area worked.

Average depth: Average depth of subsoiling. It considers only

measurements of the productive area.

Average Speed: Speed of movement of the machine in the execution of the

activity. It only considers measurements of the productive area.

Fertilizers: ID of product resources indicated in the on-board computer. Recommendation (kg/ha): Recommendation of the dosage applied of product resources in this stand.

6.4.1.1 Map types

The thematic maps aim to follow up the different aspects inherent in the field activities providing the immediate analysis as the stand is being worked, thus being an important spatial viewing tool inserted in the Hexagon Agriculture management systems.

Files

All the files sent to the system with data of the stand activities are displayed in this map.



Figure 78 - File Map.

Area Worked

The area worked in the stand is displayed in this map.



Figure 79 - Map of Area Worked

Calibration

The calibration of product resources is displayed in this map. The latter does not indicate the points where there was no calibration, but the calibration value recorded by the on-board computer.



Figure 80 - Calibration Map

Classification of Time per Equipment

This map displays the classification of time by equipment without the stand filter.



Figure 81 - Classification of Time per Equipment

Classification of Time per Stand

This map displays the classification of time by equipment only in the stand area.



Figure 82 - Classification of Time per Stand

Date

This map displays the period when there was activity in the stand.



SWS

Figure 83 - Period when there was Activity in the Stand

Linear Deviation

This map represents the linear deviation in the application of product resources.



Figure 84 - Linear Deviation

Distance between lines

The recommended distance between lines is indicated in this map.



Figure 85 - Distance between Lines

Dosage

This map displays the dosage of product resources applied.



Figure 86 - Dosage

Recommendation

This map displays the recommended application of product resources specified in the on-board computer.



Figure 87 - Recommendation

Equipment

This map displays the equipment which worked in the stand.



Figure 88 - Equipment

Points

This map displays the points collected by the equipment.



Figure 89 - Points

Depth

This map displays the depth monitored.dade monitorada.



Figure 90 - Depth

Speed

This map displays the speed recorded by the computers on-board.





Manure Sensor.

The viewing of the map of manure sensors is divided into two groups, that of the manure presence sensor of the first and that of the second engine..

Manure Sensor - Group 1



Figure 93 - Manure Sensor Group 2

Also on the maps screen there is the table and graphs of times and yields of the stand analyzed, similar to the information found in the **Routine Report**. Nevertheless, non this screen the information refers to the productive unit /stand.

Choose one of the tabs clicking with the mouse, to obtain the graphs and tables required.

Dados Diários	
▶ Gráficos Gerais de Rendimento	
Gráficos Gerais de Qualidade	
Computador de Bordo: 0003F2200	
Computador de Bordo: 0002F2200	

Figure 94 - Tabs of Times and Yields of the Stand Analyzed

Daily data displayed in the table

Data 🗘	Qia. Equip. \$	Area Percor.	(h)	1. Op. mea. (h)	1. Op. max. (h)	1. Piloa. (h)	1. Aux. (h)	(h)	(h)	Prod.	Aux.	Perd.	70 Outros	Cap. Campo Oper. (ha/h)	cap. campo Elet. (ha/h)
06/03/2014	1	0,33	0,21	0,21	0,21	0,14	0,07	0,21	2,93	4,22	2,11	6,28	87,39	0,1	1,56
08/03/2014	2	10,6	2,79	2,94	3,09	4,12	1,76	1,05	8,87	26,09	11,11	6,67	56,13	0,67	1,8
11/03/2014	2	13,19	2,89	3,05	3,2	5,14	0,96	1,71	8,35	31,8	5,94	10,58	51,68	0,82	2,16
12/03/2014	2	12,87	3,11	3,36	3,62	4,8	1,92	0,81	9,32	28,5	11,39	4,82	55,29	0,76	1,91
13/03/2014	2	2,11	0,6	0,62	0,64	0,79	0,45	1,1	11,78	5,58	3,19	7,81	83,42	0,15	1,7



Figure 96 - Graphs of Yields

For activities which have application of product resources or monitoring of the depth histograms are displayed, representing the frequency of the occurrence of dosages and general work depths per stand and separated by machine.



Figure 97 - Histogram of Application

In the pie chart, there is the percentage of the area worked in each deviation range of the application and depths.





6.4.2 Notifications by email

On menu Operating Management > Notification by Email a table is Displayed with all the notifications which the user registered to receive by email. To execute the study of the notifications it is possible to filter by Producer, Provider, Activity and Status.

itros								
Descrição			Status	Todos	-			
Produto	Selecione	•	Provedor	Selecione	Atividade	Selecione		
Buscar								
enhei								
	_							
🕫 Nova Notificação	por email							
Ações	Descrição	Tipo Produt	or Provedo	or Mapa Visuali	ado Ativi	dade Lin	nite Status	Usuário
to Records Found.								

Figure 99 - Notification by Email

To register the notifications to be received by email automatically, select button New notification by email. The screen below will be displayed.

Nova Notificação por email			×
Tipo *	Selecione	Status (%) *	
Periocididade *	Diário 💌		
Descrição *			
Produtor *	Selecione	Provedor *	Selecione
Atividade	Selecione		
 Salvar Cancelar 			

Figure 100 - Registration of New Notification by Email

To register a new notification proceed as follows:

- 1. In Type select deviation of application of product resources, actual distance between lines which is outside the acceptable ranges or status of the stand which is the percentage of stand area which was executed.
- 2. In Limit of tolerance (%) insert the minimum value required for receiving notification.
- 3. Select the periodicity of dispatch of the notification, daily, weekly or monthly.
- 4. Insert the Description.
- 5. Select the Producer, Provider and Activity.
- 6. Select between Yes and No if wishing to receive email.
- 7. Click on Save.
- 8. Your registration of new notification was executed.

Module concerned with management of mobile assets of road infrastructure.

It includes screens of registrations and reports with information of the productive hours, stoppages and maintenance, distances traveled, rpm, movement speeds, etc.

7.1 Management Report

In Management Report there is a list of all the times (stoppage, operation, maintenance, etc.) developed by each machine which worked on a farm in accordance with its phase (harvest, road maintenance, implementation, etc.) and the totalization of these times.

To generate the report enter with the data of Producer, Provider and Period and click on Search.

atório Gerencial				
s				
Produtor • Hexagon A	ariculture	Provedor + Florianopolis		
Residen (Ittimer 30		Defe lefelet + 1000/2019	Data Staal + 100550	
Buscar Baixar em C 8V				
opriação De Atividade Realizada Pi	r Empresas Parceiras			
Irdem		INFO	Valor (R\$/h)	
Encarrecado JFI-8P			Valor Total(R\$/h)	
		I mão de obra		
		C máguina		
	Про	o de Máquina	Visto Superviso	r JFI-8P
Observações:		JFI-8P	Fibria-8P	
			-	
controles operacionals over.			F	
enda Não Identificada				
		Auxillar (h)		
Grupo de Máquinas	Capina Mecánica Er	itre Linhas Preparo de	Iolo Mecánico Reforma III	Subsolagem com profundimetro
Estera Trator Apricola				

Figure 101 - Management Report

7.2 Asset Management

By means of the Asset Management Report information can be extracted as: general graphs (operating times, work shifts, distance traveled, classification of times, etc.), graphs by vehicles (speed and distance traveled by the equipment) and several tables per time type, time reason and per each vehicle.

When doing the search filters - producer, provider, phase and period, maps are made available which indicate which equipment worked in that area, its speed, RPM, points developed and the operating reasons.

7.2.1 Maps

The viewing of the data by means of maps is done thematically: speed of movement, equipment, date, RPM, points and reasons of operating and is formed of layers of google, farms, stands and progress of the vehicle (points).

Speed Map

On the speed map it is possible to view the speed performed by the machines in each farm in which they operated.



Figure 102 - Speed Map

Equipment Map

On this map it is possible to check which equipment worked in each area indicated.



Figure 103 - Equipment Map.

Date Map

The date map shows the period that the equipment worked in the field.



Figure 104 - Date Map

Map of RPMs

The reason for monitoring the rotations developed by each item of equipment in an area is to know if the operation is being productive or not.



Figure 105 - Map of RPMs

Map of Points

This map allows the user to check the points that each machine developed in the areas worked.



Figure 106 - Map of Points

Operating Reasons Map

Each activity is divided into operating reasons. These reasons are parts of the activity which is developed by the equipment in a determined area. E.g.: unloading soil, loading gravel, firefighting, etc.

On this map the user can check which reason each item of equipment used at the moment of operating in the area.

Aquardando Pecas





7.2.2 General Graphs

The general graphs are the totalization of the monitoring of time and other relevant information. By means of these graphs, it is possible to follow up the operating times, the effective times per equipment, work shifts, the distance traveled and the classification of the times.



59 70



Figure 109 - General Graphs - 2

Graphs per Time Reason

These graphs are distributed by the time reasons of each operation.

In them we can view the opening of the time groups and the details of all the reasons indicated in the operation, whether productive or not.





Graphs per Vehicle

This graph contains information of distance traveled and speed per vehicle.





7.2.3 Tables

Tables per Time Type

The Table by **Time Type** is a rather complete table which indicates: how much equipment worked per day in an area, the total hours worked, the average of these hours, the operating start and end time, the distance traveled by the machines, the situation that the machine was in most of the time: with the engine on or off, and what percentage of the operation the machine was productive, stopped, in maintenance, etc.

	Num	Hora	Hora Final	Distância	Tempo	Tempo	Vel. Média	Tem	po Situ M	ação M otor	áquina				ipos d	e Tem	90		
Data	Equip.	inicial (h)		Total (km)	Total (h)	médio (h)	(km/h)	Lig	ado	Desli	gado	Oper	ação	Par	ada	Manut	enção	Ou	tros
								(h)	(%)	(h)	(%)	(h)	(%)	(h)	(%)	(h)	(%)	(h)	(%)
01/11/2013	3	07:47:53	16:12:57	136,11	18,41	6,14	10,77			18,41	100,00	13,76	74,77	4,60	25,01	0,03	0,14	0,01	0,08
02/11/2013	1	08:36:36	10:37:08	47,52	2,01	2,01	31,73			2,01	100,00							2,01	100,00
04/11/2013	3	06:37:27	15:41:53	6,15	11,25	3,75	1,23			11,25	100,00	5,45	48,46	1,66	14,76	4,13	36,70	0,01	0,08
06/11/2013	3	13:24:53	13:50:24		0,23	0,08				0,23	100,00			0,03	14,30			0,20	85,70
08/11/2013	2	07:06:03	16:13:37	14,53	9,18	4,59	4,96			9,18	100,00	7,08	77,12	0,07	0,75	0,01	0,07	2,03	22,06
09/11/2013	3	06:11:50	16:12:51	25,39	16,08	5,36	3,29			16,08	100,00	14,52	90,25	1,55	9,61	0,02	0,11	0,01	0,03
10/11/2013	1	06:10:36	13:12:48	10,68	7,04	7,04	2,06			7,04	100,00	7,03	99,85					0,01	0,15
11/11/2013	3	06:16:21	16:08:45	12,55	24,71	8,24	2,29			24,71	100,00	21,47	86,89	2,29	9,28	0,83	3,36	0,12	0,47
19/11/2013	1	14:19:17	15:40:52	0,00	0,99	0,99	0,00	0,36	36,12	0,63	100,00	0,34	34,74	0,25	24,82	0,36	35,89	0,04	4,54
20/11/2013	3	08:17:57	15:49:19	3,05	5,99	2,00	0,61	2,84	47,47	3,15	100,00	2,84	47,37	0,30	5,00	2,75	45,96	0,10	1,66
21/11/2013	1	06:02:35	13:10:54	17,54	3,57	3,57	7,34	0,24	6,77	3,33	100,00	0,55	15,43	1,69	47,49	0,57	16,09	0,75	20,98
22/11/2013	2	05:08:24	16:08:26	30,91	9,57	4,78	4,05	3,61	37,70	5,96	100,00	4,43	46,29	2,35	24,54	2,25	23,55	0,54	5,61
23/11/2013	2	06:05:18	15:55:37	16,20	5,34	2,67	3,27	2,75	51,63	2,58	100,00	2,79	52,31	0,62	11,70	1,91	35,74	0,01	0,25
25/11/2013	2	10:37:51	16:16:17	13,29	2,55	1,27	6,89	1,59	62,58	0,95	100,00	1,55	60,67	0,47	18,37	0,53	20,96		
26/11/2013	2	08:27:51	16:10:46	42,93	8,55	4,28	7,13	4,28	50,10	4,27	100,00	4,25	49,66	2,57	30,01	0,96	11,17	0,78	9,16
27/11/2013	2	06:10:21	12:49:08	34,64	6,63	3,31	6,95	4,06	61,20	2,57	100,00	3,76	56,66	2,87	43,33	0,00	0,01		
TOTAL				411,50	132,10	60,07		19,74		112,36		89,81		21,32		14,34		6,62	

Figure 112 - Table per Time Type

The Table by Time Reason shows how many hours were executed by the machines in each operating reason for the period worked.

																									Moti	vos d	le Te	mpo	(h)		
Data	Espalhar Solo	Compact Cascalho	Esparramando Materia	Refeicao / Cafe	Manut. Arvus	Aguardando Servico	Compactacao Solo	Nao Informado	Desloc.na Operacao	Escavacao.carga Solo	Transporte Solo	Inspecao Geral	Carregando Material Transport. Material	Patrolamento Estrada	Abertura Viradouro	Treinamento/ Reuniao	Treinamento Na Oper.	Troca De Pneu	Aguardando Car Bota	Prep. Máquina	Condicoes Climaticas	Final Da Atividade	Apontamento	Manutencao Mecanica	Manutencao Eletrica	Aguardando Pecas	Transp Maq. Em Desl.	Transporte Cascalho	Manobra	Desloc.p/ Manut.	Aguardando Eletricis
01/11/2013	4,69	6,06		4,58				0,01			2,93					0,02		0,01										0,08			
02/11/2013								2,01																							
04/11/2013	0,55	3,59		0,02							0,01 3	,15				1,63	1,30	0,97													
06/11/2013				0,03				0,20																							
08/11/2013	0,97					0,05		2,03	2,39					1,91	1,81	0,01															
09/11/2013	8,46	5,52		1,08							0,52												0,46								
10/11/2013							7,03	0,01																							
11/11/2013	9,00	6,83		2,26	0,08			0,12		4,67						0,02			0,96	0,73											
19/11/2013				0,01	0,36			0,04					0,34									0,23									
20/11/2013			0,40	0,26	2,75	0,01		0,10	0,15				2,29									0,03									
21/11/2013				0,64		0,29		0,71	0,04		0	,22	0,15 0,30					0,01			0,56	0,21		0,14	0,10	0,05			0,04	0,03	0,01
22/11/2013			3,09	0,26	2,17	1,95		0,54	0,24		0	,02	0,41 0,59								0,09	0,05				0,04	0,08	1			
23/11/2013			2,07		1,91	0,61		0,01	0,40				0,05 0,27																		
25/11/2013			1,12	0,01	0,53	0,45			0,40				0,02																		
26/11/2013			2,59	0,20	0,96	2,35		0,78	0,99				0,66									0,02									
27/11/2013			1,82	0,25		2,62			1,20				0,73																		
TOTAL	23,67	22,00	11,09	9,60	8,75	8,33	7,03	6,56	5,81	4,67	3,47.3	,39	3,24 2,57	1,91	1,81	1,68	1,30	0,99	0,95	0,73	0,65	0,54	0,46	0,14	0,10	0,09	0,08	0,08	0,04	0,03	0,01
								_				-																			

Figure 113 - Table per Time Reason

Tables per Vehicle

In the **Tables per Vehicle** all the sequential indications are obtained in an individual manner for each item of equipment used. E.g.: tables are generated containing the following information: end and start time, operating reason, distances, average speed, etc.

				Caminhão Volv	ro-3008				
T. Inicial (h)	T. Final (h)	T. Op. Total (h)	Motivo de Operação	Motivo De Operação	Тіро	Distância Inicial (m)	Distância Final (m)	Distância Total (km)	Vel. Média (km/h)
01/11/2013 10:28:01	01/11/2013 11:30:32	01:02:31	1409	Refeicao / Cafe	Parada	5.596	5.596		
01/11/2013 11:30:32	01/11/2013 11:30:40	00:00:08	1422	Aguardando Servico	Parada	5.596	5.596		
01/11/2013 11:30:40	01/11/2013 11:30:45	00:00:05	1427	Combate A Incendio	Operação	5.596	5.596		
01/11/2013 11:30:45	01/11/2013 11:30:57	00:00:12	1434	Encalhamento (Manut)	Manutenção	5.596	5.596		
01/11/2013 11:30:57	01/11/2013 11:31:12	00:00:15	1462	Abertura Curvas	Operação	5.596	5.596		
01/11/2013 11:31:12	01/11/2013 16:12:36	04:41:24	1466	Espalhar Solo	Operação	5.596	10.344	4,75	2,62
01/11/2013 16:12:36	01/11/2013 16:12:42	00:00:06	1464	Apoio Transp Reboque	Operação	10.344	10.344		
01/11/2013 16:12:42	01/11/2013 16:12:57	00:00:15	1444	Treinamento/ Reuniao	Parada	10.344	10.344		
02/11/2013 08:36:36	02/11/2013 10:37:08	02:00:32	9999	Nao Informado	Outros	0	47.520	47,52	31,73
02/11/2013 10:37:08	02/11/2013 15:36:52	04:59:44	1468	Patrolamento Estrada	Operação	47.520	58.494	10,97	2,79

Figure 114 - Table per Vehicle

At the end of each table, there is the option **Download in CSV** where the user can generate the same tables in CSV format and transform them to Excel tables saving them in his/her own computer.

														_					
TOTAL				411.50	132.10	60.07		19.74		112.36		89.81		21.32		14.34		6.62	
27/11/2013	2	06:10:21	12:49:08	34,64	6,63	3,31	6,95	4,06	61,20	2,57	100,00	3,76	56,66	2,87	43,33	0,00	0,01		
26/11/2013	2	08:27:51	16:10:46	42,93	8,55	4,28	7,13	4,28	50,10	4,27	100,00	4,25	49,66	2,57	30,01	0,96	11,17	0,78	9,16
25/11/2013	2	10:37:51	16:16:17	13,29	2,55	1,27	6,89	1,59	62,58	0,95	100,00	1,55	60,67	0,47	18,37	0,53	20,96		
23/11/2013	2	06:05:18	15:55:37	16,20	5,34	2,67	3,27	2,75	51,63	2,58	100,00	2,79	52,31	0,62	11,70	1,91	35,74	0,01	0,25
22/11/2013	2	06:08:24	16:08:26	30,91	9,57	4,78	4,05	3,61	37,70	5,96	100,00	4,43	46,29	2,35	24,54	2,25	23,55	0,54	5,61
21/11/2013	1	06:02:35	13:10:54	17,54	3,57	3,57	7,34	0,24	6,77	3,33	100,00	0,55	15,43	1,69	47,49	0,57	16,09	0,75	20,98
20/11/2013	3	08:17:57	15:49:19	3,05	5,99	2,00	0,61	2,84	47,47	3,15	100,00	2,84	47,37	0,30	5,00	2,75	45,96	0,10	1,66
19/11/2013	1	14:19:17	15:40:52	0,00	0,99	0,99	0,00	0,36	36,12	0,63	100,00	0,34	34,74	0,25	24,82	0,36	35,89	0,04	4,54
11/11/2013	3	06:16:21	16:08:45	12,55	24,71	8,24	2,29			24,71	100,00	21,47	86,89	2,29	9,28	0,83	3,36	0,12	0,47

+ baixar em CSV

Figure 115 - Table to Download as csv

7.3 Distribution

By means of the **Distribution Report** it is possible to make the payments based on hours. It is possible to filter by contractor, period, phase (cost center), vehicle type, vehicle ID.



Figure 116 - Distribution Table

7.4 Points

The dispatch and upload of the infrastructure points coincide with the points sent and dispatch of points of SWS. In this part it is possible to send files in zipped folders and also to view the files already sent.

The files are separated by dispatch name, date of dispatch and processing, producer, provider, equipment, phase, which user sent the files, the areas already executed and their percentage of conclusion.

▼ Fi	ltros											
		Produtor*	Selecione	Provedor	Selecione	Ŧ	Equipamento Sel	cione		Ψ		
		Fase	Selecione 🔻	Status	Selecione	▼ No	me do Arquivo					
	Buscar											
▼ Ar	quivos Env	riados										
	Atualizar										Á102	
	Data de Envio	Data de Processamento	Agrupador		Nome do Arquivo	Produtor	Provedor Equipamento	Fase	Usuário	Área Total (ha)	Total Coberta (%)	Statu
C	12/3/13 9:33 AM	12/3/13 10:52 AM	SP7_MN_30048_1291_Sapoti_30_11_13.zip	00d0694776	d0_20131130084840_0000.Ti	Suzano-SP	ADS 1291	Manutenção Viária	Claudia Wesselka Garcia	0.0	0.0%	Pront
C	12/3/13 9:33 AM	12/3/13 10:52 AM	SP7_MN_30048_1291_Sapoti_30_11_13.zip	00d0694776	d0_20131129172403_0042.Ti	Suzano-SP	ADS 1291	Manutenção Viária	Claudia Wesselka Garcia	30.35	94.12%	Pront

Figure 117 - Files Sent

7.5 Registrations

The **registrations** tab refers to the registration of certain information which is crucial to the development of the other sectors of the Infrastructure and also serves as a database concerning operations executed by the producer

Phase: it is the cost center of the operation to be executed.

Reason Type: time groups customized as per classification of companies.

Operating Reason: indication of the times of operating, in production or in suspended operation. It should be pointed out that the productive reasons are associated with rules and sensors which validate if it is in productive mode.

Vehicle: registration of models, manufacturers and ID of vehicles with

monitoring system.

Phase Configurations: association between information to define the results.

Operator: record of all the operators who operate machines registered in the Infrastructure system.

8 Agriculture

Module concerned with agricultural activities management.

Through producer and provider filters it is possible to generate a report with information of the field data viewed through maps and statistics of yield and quality as area worked, total product resources applied, deviation of dosage applied, start and end date of the operation, average movement speed, etc.

In this report there is the option of exporting the map of polygons of the area worked in format .shp.

1	Produtor *	Hexago	Agriculture	~	Provedor *	Hexagon Agriculture	Atividade	Selecione	~
	Deriodo	(Illino)	não	V	Data Inicial	01/02/2016	Data Final	29/02/2016	
scar	-en000	Chanton				0 10000 10	Con The		
scar ório	Faze	enda	Talhão		Status	Atividade		Data Inicial	Data Final
scar ório	Feriodo Faze HX-A	enda IG 01	Talhão 09-12		Status 13.38%	Attvidade CALAGEN (TERCEIRO)		Data Inicial 02/02/2016	Data Final 06/02/2016

Viewing maps

Figure 118 - Reports of Agricultural Times



Figure 119 - Map Export

Module with support functions for the Hexagon Agriculture on-board management system.

9.1 Generating CB file

In **Generating CB files** it is possible to export the database of the Producer/ Provider with all the information required and customized to be inserted in the computer on board.

The module offers two options:

- export to TxF in format .arv
- export to Titanium Monitoring, Ti5 and Ti7 in format SQLite.

To generate the export file, choose the option required and insert the **Producer** and **Provider**.

🦉 Gerador de Arquivos de	Dados para CBs					
👻 Gerador De Arquivos De Da	dos Para CBs					
Produtor	Hexagon Agriculture	Provedor* Hexagon A	griculture 💌			
Gerar arquivo					_	
			Informações sobre os d	ados gerados	×	
			Totais			
			Usuários	25		
			Motivos de Operação	94		
			Fases:	1		
			Máguinas:	6		
			OK			

Figure 120 - Generate Files to Export

In the export file information is generated as operators, activities, product resources, time reasons, shifts, etc. and they must be inserted in all the CBs of the same provider.

9.2 Unblocking of TXF

To unblock TXF it is necessary that the operator periodically downloads the data in SWS. If the operator does not download the data within 3 days, the on-board computer remains blocked until executing the process of dispatch of files and return with the updated password.

When the data is sent to SWS, the memory card receives a file with passwords and these passwords 'unblock' the system when the card is replaced in the onboard computer.

9.3 Access Statistics

The access statistics report contains information of the quantity of access of users of a determined producer/provider in a specific period and the date of the last access of each user.

To generate the report enter with the provider and producer, choose a period and click on **Search**.



Figure 121 - Graph of Daily Access

			1 a 10 de 23
+ Usuário	→ Qtd. de Acessos	← Último Acesso	+ Empresa
Usuário 1	25	2016-03-16 08:32:20.024	Hexagon Agriculture.
Usuário 2	19	2016-03-16 08:29:51:641	Hexagon Agriculture.
Usuário 3	18	2016-03-15 18:17:31.561	Hexagon Agriculture.
Usuário 4	18	2016-03-16 08:39:30.423	Hexagon Agriculture
Usuário 5	9	2016-03-15 17:50:08.926	Hexagon Agriculture
Usuário 6	5	2016-03-16 08:03:34.379	Hexagon Agriculture
Usuário 7	4	2016-03-15 13:58:28.974	Hexagon Agriculture
Usuário 8	3	2018-03-14 17:13:39.462	Hexagon Agriculture
Usuário 9	3	2016-03-15 23:22:51.088	Hexagon Agriculture
Usuário 10	3	2016-03-15 12:22:10.472	Hexagon Agriculture

Figure 122 - Daily Access

9.4 Attendance Sheets

Area to inquire about all the reports of attendance executed in the field by the technical team of Hexagon Agriculture. To view the attendance sheets in Filters choose the Producer and click on Search.

A list will appear with all the attendance executed. Click on the icon to

obtain information regarding the attendance or download the sheet.

	Cadastros	👻 🖙 Pontos 👻	6 Relatórios	* E Infraestrut	ura 👻 🔳 Agricola 👻 🦄	Receb. Auto 👻	C Apontamento	* Ferrar	nentas 👻 🛡 Si	obre	© claudia.garcia@he
20 F	ichas de	Atendimento									
- F	litros										
		Número			Data						
		Produtor*	Selecione		 Provedor 			-	Atividade		•
		Tipo	Selecione		 Motivo 	Selecione		- -	Fase		•
		Veículo			Equipamento						
- F											
	ichas De A	tendimento									
	Núme	ro Data	Produtor	Provedor	<u>م</u>	tividade/Fase				Arquivo	Ações
	Núme 223	To Data 15/07/2014 Motivo: substituiçã Tipo: chamado	Produtor Suzano-SP o botão remoto	Provedor LR Campos	Ma Conteùdo do arqui Equipamen	tividade/Fase inutenção Vlária vo: image/jpeg ito: EH 276	Responsáv	Veículo: el Produtor	CB 3102 Adilson	Arquivo TI-3102.jpg Responsável Arvus: R Responsável Provedor: C	Ações A ções A è Rafael Rocha Odair L. de Barros
	Observ	To Data 15/07/2014 Motivo: substituiçã Tipo: chamado ações: Instalação	Produtor Suzano-SP o botão remoto Monitoramento	Provedor LR Campos de Estradas	A Ma Conteúdo do arqui Equipamen	tividade/Faxe inutenção Viária vo: image/jpeg ito: EH 276	Responsév	Veículo: el Produtor	CB 3102 Adilson	Arquivo Ti-3102.jpg Responsável Arvus: R Responsável Provedor: C	Ações 4 2 Rafael Rocha Odair L. de Barros
	Observ Observ Observ	to Data 15/07/2014 Motivo: substituiçã Tipo: chamado ações: Instalação 15/07/2014	Produtor Suzano-SP o botão remoto Monitoramento Suzano-SP	Provedor LR Campos de Estradas LR Campos	A Ma Conteúdo do arqui Equipamen Ma	tividade/Faxe inutenção Vlária vo: image/jpeg ito: EH 276 inutenção Vlária	Responsáv	Veículo el Produtor	CB 3102 Adilson	Arguivo Ti-3102.jpg Responsável Arvus: R Responsável Provedor: C Ti-3101.jpg	Ações 4 12 Rafael Rocha Odair L. de Barros
	Núme 0 223 Observ 0 0 224 0 1 0 2	Data 15/07/2014 Motivo: substituiçã Tipo: chamado ações: Instalação 15/07/2014 05/02/2015 05/02/2015	Produtor Suzano-SP o botão remoto Monitoramento Suzano-SP Fibria-MS Fibria-MS	Provedor LR Campos de Estradas LR Campos JFI-MS	A Ma Conteúdo do arqui Equipamer Ma Preparo de Solo c Prenaro de Solo c	Nividade/Faxe inutenção Vlária vo: image/jpeg ito: EH 276 inutenção Vlária com fertilização e p com fertilização e p	Responsáv rofundimetro	Veículo: el Produtor	CB 3102 Adilson JI_Prepac	Arquivo TI-3102.jpg Responsável Arvus: R Responsável Provedor: C TI-3101.jpg Reforma_05-02-15 Mauro J Reforma_05-02-15 Mauro J	Ações 4 2 Rafael Rocha Odair L de Barros
	Núme 0 223 Observ 0 0 224 0 1 0 2 0 2	Data 15/07/2014 Motivo: substituiçã Tipo: chamado ações: Instalação 15/07/2014 05/02/2015 05/02/2015	Produtor Suzano-SP o botão remoto Monitoramento Suzano-SP Fibria-MS Fibria-MS Sibria-MS	Provedor LR Campos de Estradas LR Campos JFI-MS JFI-MS	A Ma Conteúdo do arqui Equipamer Preparo de Solo c Preparo de Solo c Adu	Atividade/Faxe Inutenção Viária vo: image/jeg Inutenção Viária com ferbilização e p icom ferbilização e p icom ferbilização e p	Responsáv rofundimetro rofundimetro	Veículo: el Produtor	CB 3102 Adilson Jfl_Prepac Bacote	Arquivo Tr-3102.jpg Responsável Arvus: R Responsável Provedor: C Tr-3101.jpg Reforma_05-02-15 Mauro.j Reforma_05-02-15 Mauro.j Reforma_05-02-15 Mauro.j	Açõe Aafael Rocha Odair L. de Barros

Figure 123 - Attendance Sheets

9.5 Download Area

Area to download packages of maps of the areas worked in format .shp, 24 hours after the request by the user in Productive Structures Management Report.

Enter with information as creation data and update date to search the file required.

106								
Nome arguivo			Descrição					
Peri. criação	Ditimos 5 clas		Data Inicial	30/08/2014		Data Final	04/09/2014	
Peri. atualização	Selectone .	• 1	Data Inicial			Data Final		
Buscar								
Non	a accusion	Description			Data de criação		Data ultima atualização	

Figure 124 - Download Area

In Support access the area for inquiry about the version of the SWS management system and help desk when it is necessary to open calls for embedded technology attendance (on-board computer) or the SWS management system.

10.1 Concerning

To access the information about SWS version enter Support -



Figure 125 - Support about SWS

10.2 Help Desk

To open an attendance call enter Support - Help Desk.

- 1. Enter with the company name.
- 2. Choose the category: SWS or on-board computer
- 3. Write the subject and the message..

The Hexagon Agriculture team will get in touch to aid you.

✓ Help Desk		
Empresa*	Empresa A	
Categoria*	Selecione	
Assunto*		
Mensagem*		
Enviar mensagem		

Figure 126 - Support Request



