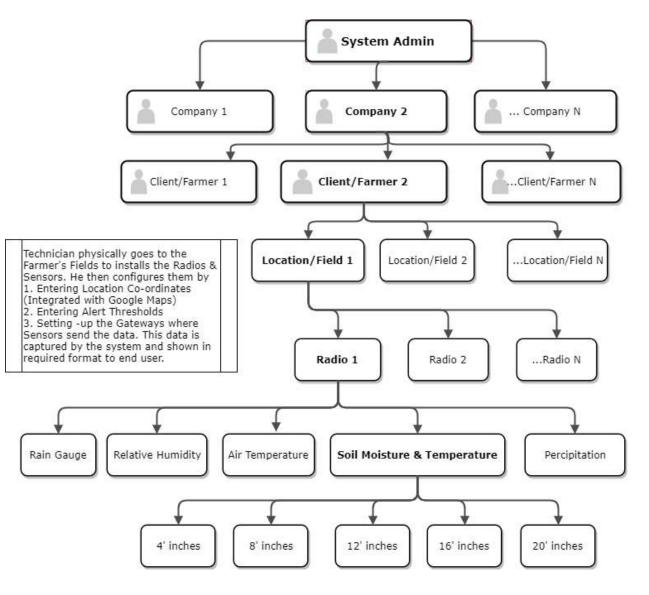
Digital Farming - Sensor Tracking & Reporting System

Developed by <u>www.TeNetSoft.com</u>

Overview: System Receives Information/Alerts from Sensors – which can be accessed by Farmer on a mobile device, laptop, computer OR via E-mail & SMS.

The data is received in Real time and Farmer can get a up-to-date information about their agricultural fields from anywhere in the world & can initiate immediate corrective actions for Alerts.

Hi Level System View



Digital Farming: Sensor Tracking & Reporting System – Developed by TeNetSoft.com © 2018.

Main System Entities

- 1. System Administrator
- 2. Company Administrator
- 3. Technician
- 4. Farmer/Clients
- 5. Fields/Locations
- 6. Radios
- 7. Sensors
- 8. Gateways

System Administrator: Performs the following tasks

- 1. Add/Modify/Delete Companies in the system.
- 2. Add/Modify/Delete Various Soil Types
- 3. Add/Modify/Delete Various Crop Types
- 4. Add/Modify/Delete Types of Graphs and its settings
- 5. Can the monitor the health of the whole system across different company accounts.

Company Administrator: This section is for Companies who use the system. Each Company can have multiple Clients/Farmers under them.

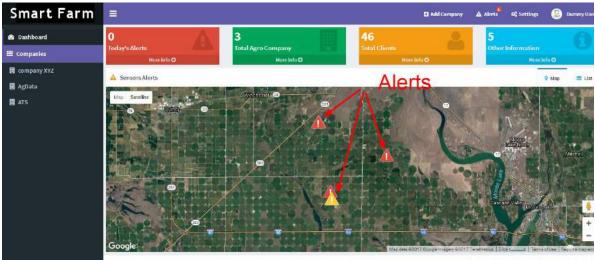
Technician: Is the link between Companies and Clients/Farmers and performs the following tasks

- 1. Physically installs the Radio at a location.
- 2. Enters the Map Co-ordinates of the Radio in the system.
- 3. Configures the Gateway so that Sensors attached to the radio start transmitting the data to the gateway.
- 4. Enters the "Threshold values" for Sensors so that the system can send alerts when the thresholds are reached.

Farmers/Clients: Companies have multiple Farmers/Clients under them and these Farmers/Clients have multiple Fields/Locations where Radios are installed.

System Screenshots with summary

Main System Dashboard: It shows various details like Companies list in the Right Navigation and Sensor "Alerts" on Google maps



Developed by Tenet Software Consultants - Version 1.0.1

Smart Farm	E D Add Company								tings 🙆 Dummy Us	
🔓 Dashboard	0		3			46	2	5	A	
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🛱 company XYZ 🛃 AgData	A Sensors	Alerts							V Map 🚍 Lis	
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	S.No.	🔝 Company Name	If Client Name	If Sensor Value	IT Alert Message	IT Alert Date II	Location Name	Radio Name	Sensor Name	
	1	AgData	Ryan Smith	0.32 get	Low	04/17/2017 4:15 PM	Smith C3 potatoes	47608 George's tank test	Ryan's test tank 1	
	2	AgData	Kart Port	3.39%	Critical	03/16/2017 9:30 AM	Location 1	42324 C507F	Relative Humidity	
	3	AgDeta	Kart Port	-5.53 °F	Critical	03/09/2017 10:45 PM	Location 1	42324 C507F	Temperature	
	4	AgData	Kart Port	0.02.%	Critical	03/25/2017 3:00 AM	Location 2	41772 5199	Relative Humidity	
	5	AgData	Kart Port	3.39%	Critical	03/16/2017 9:30 AM	Location 2	42324 CS07F	Relative Humidity	
	ShowingItos	i of 5 entries							Previous 1 Next	
							Deve	loped by Tenet Softw	are Consultants - Version 1.0.	

Alerts Shown in List Format



Gateway/Radios/Sensors list is shown in the Right Navigation

Section to Manage Settings like: Company, Soil, Graph & Radio

🏦 Dashboard	📕 AgData (Company		Soil (200	ph & Radio	Sottinge	Soll Types &	Crops				
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	S.No. 🏦	Company Name 👫	Client Name 🔰	Sensor Value	II /	Alert Message 👫	Alert Date 🚦	Location Name 1	Radio Name	11 Sensor Name 11			
	1	AgData	Ryan Smith	0.32 gal	1	Low	04/17/2017 4:15 PM	Smith C3 potatoes	47608 George's tank t	est Ryan's test tank 1			
	2	AgData	Kart Port	0.02 %		Critical	03/25/2017 3:00 AM	Location 2	41772 SY99	Relative Humidity			

System shown the data in various formats like

- Graph
- Widget
- Map
- List
- Notes

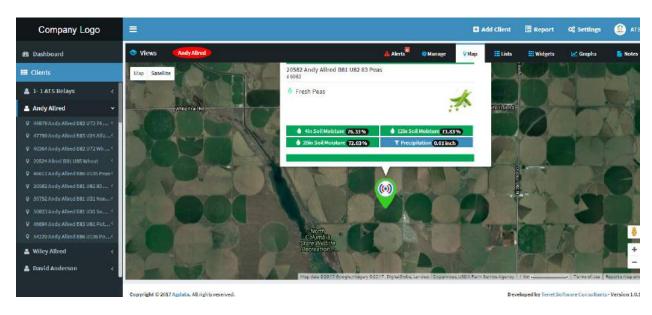
Graph Format: Senor Data is shown in Graph Format with various Graph Controls like:

- Administrator can edit the Graph Time period from 6 hours, 1 week, 1 month etc.
- Change X & Y Co-ordinates, Change Starting and Ending points, Edit colors.
- Turn On/Of Various a particular Senor Input on Graph
- Highlight Grid Markings

Company Logo							•	dd Client	🖪 Report	0\$ Settings	
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Widget Format: Sensor data from Soil Moisture, Precipitation & Soil Temperature is shown in Widget Format. The widget colors will change if readings exceed threshold values entered in the backend.

Company Logo	=						H (dd Client	🗄 Report	0° Settings	AT
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 40364 Andy Afreed B82 072 Wh ≤ 20524 Afreed B81 085 Wheat 	8"	-MAR	59.58 %		8		-76'F -50'F	60.33 °F			
 ♀ 46611 Andy Alleed B86 U105 Pean ♀ 20582 Andy Alleed B81 U82 83 	12"	AR	62.89 %	Last Applied: 0.4 inch Weekly Applied: 0 inch	15		- 25'F 0°F	59 .4 9 °F			
 ♀ 50752 And y Allied B&L U31 Not ♀ 50823 And y Allied B&L U31 So	16"	T. J.	72,93 %	Weekly Target: 0 inch Running Total: 5.664 inch	16			58.62 °F			
 46694 Andy Alired B83 U61 Pot 54220 Andy Alired B86 U106 Po 		Average: 63.99 %	6	in an		Average:	59.91 °F				
La Wiley Allred <	- 47	790 Andy Alired B83 U24 A	ifalfa [Andy Allre	d]							
🛔 David Anderson 🧹 🤞										47790 Andy Alfred B8	3 U24 Alfalfa
		Soil Moisture		Precipitation		Soil Tem	perature				



Map Format: Integrated with Google Maps and show the Crop & Sensor details.

List Format: The list view displays the latest values of the sensors as text. The data is displayed location wise.

Company Log	o								🗄 Add (:lient 🔳 Re	port O	\$ Settings	(1) ATS
Search Client	Q	Views Andy Allred	6				4	Alerts Manage	<mark>19</mark> Мар	ELists	dgets [🛃 Graphs	B Notes
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III Clients		44879 Andy Allred B82 U73 74 Alfalia											
🌡 1-1 ATS Relays	۰.	Buidlid [44879 Andy Alfred 882 UT3 74 Alfafia]	Crop Nam	e : Alfalfa				Planting Date :			Soil Type:		
Andy Allred	~	Soil Moisture	4º	8"	12"	16**	Average	Last Applied	Weekly Applied	Weekly	Target	Running To	tal
🌲 Wiley Allred	. e .	Son Moisture	60.56% 59.58% 6		62,89%	62.89% 72.93%		0.4 inch	0 inch	0 inch	0 inch		
👗 David Anderson	्र	Soil Temperature	4" 8 " 61,21% 60,33%		340	12" 59.49"F		16" 58.62"F		Average 59:91 *F			
🛔 Jerry Benson	∂e.	47790 Andy Allred 883 024	02-611		0000	13		39831	50402,1		139432.1		
L Horning Brothers	e.	Alfalfa [47790 Andy Alired BB3 U24 Alfalfa]	Crop Nam	e : Alfalfa				Planting Date :			Soil Type :		
🛓 Isaak Brothers	¢	Soil Moisture	4"	8"	12"	16"	Average	LastApplied	Weekly Applied	Weekdy	Target	Running To	tal
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🛔 Steele Brown	∵e	40364 Andy Allred B82 U72			4			2000			14200000	222.5.5	
👗 Glenn Burkholder	¢	Wheat [40064 Andy Alired 882 U72 Wheat]	Crop Nam	e : Winter Whea				Plant	ing Date :		5oliTy	pe:	
			att	1.20	161	Avera	-	et applied	akly fundied	Washin Tarr		Running Tota	

Notes Format: This view displays the notes set up by the farmer for each location. Farmer can write in notes regarding crops, irrigation and other details per location.

Search Client Q	🙁 Vie	ws Kart Port)	🔺 Alerts	P Manage	₽ Map	ii Lists	👬 Widgets	🛃 Graphs	E Notes
😰 Dashboard	-	Location 1 [Kart Port]								() Print
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		ht © 2017 Agdata, Alling						loped by Tenet So		

The Managers and Farmers have their individual logins as well and can view the dashboard of their assigned locations.

Future System Enhancements

Use in other Sectors: The same technology & concept can be implemented for any Corporate OR Non Profit in Sectors like Construction OR Manufacturing. Sensors can be programmed to receive & track any kind of values & parameters. They may include Environmental or Natural readings to track the size of a lake or flow of a river OR these some parameters may be entered manually too!

Blockchain: System can be enhanced to Blockchain model to leverage the benefits like as secure and immutable data which Blockchain technology offers! Plus it can be extended to other uses like

- 1. Blockchain farming will track the whole journey of food from sowing to dinner table with detail like which minerals and fertilizers were used in the crop and how it was grown!
- 2. Banks and Financial Institutions are integrated & use this system to calculate Crop Insurance Premium – i.e. Premium of a farmer who quickly & successfully neutralizes a System Alert will be lower than the one who doesn't take any action on a System Alert!

**End of File **