



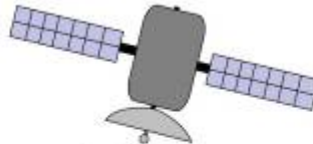
ALLU 3D Positioning System

System shows to the PMX operator where the mixing head is and how the process parameters are reached.

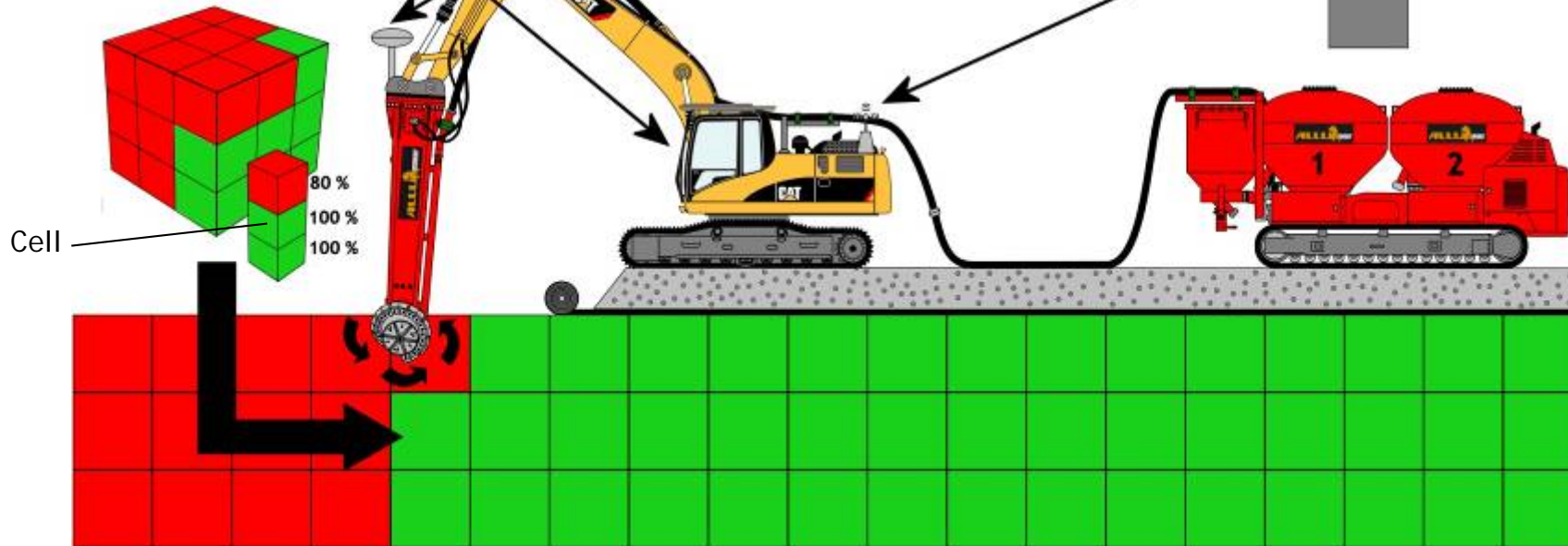
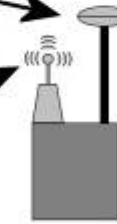
Operator main view



GPS "ALLU" satellite



GPS / WLAN base station





ALLU 3D Positioning System

3D components

PMX mounting

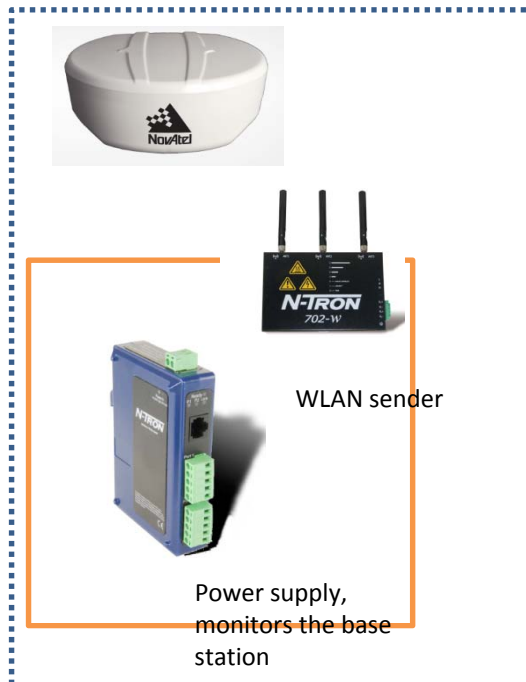
Master Antenna
Finds it's position and utilizes the correction data from the ALLU base station
Receives position information from the slave antenna and uses it for calculating the direction.



Slave antenna
Provides position data to master antenna for direction calculation

Base station on site

Fixed mounting at the job site.
Provides correction data to the master antenna



Operator's display



Job site settings input.
Operator monitors the mixing progress.

Inside/outside the excavator

Industrial PC
Stores data into SQL database. USB port for data transfer to reporting PC





ALLU 3D Positioning System

Jobsite data entry windows

Pennala

Binder:

PF id:

Rectangle side length [m]:

Tool length [cm]:

The antenna on the offset [cm]:
 x: y: z:

Set origo:

Enter the working direction:

Binder:

Upper limit [%]: ON/OFF

Lower limit [%]: ON/OFF

Mixing time:

Upper limit [%]: ON/OFF

Mixing: ON/OFF

Target depth [m]:

	kg/m ³	s/m ³
0-1m	120	30
1-2m	120	30
2-3m	120	30
3-4m	120	30
4-5m	120	30



ALLU 3D Positioning System

Main user interface

Pennala

Zoom + Zoom - 1:1

Working cell Selected cell

kg/m³ kg/m³

0% 0% 133% 138% 131% 112% 108%

x=4 y=2 x=3 y=2

Accept Accept

Set zero level Number Of Satellites: 4
Inclination: 0

New work Get work Properties Working Info Switch User Close



Report program Main user interface

ALLU3D Report

Import data Worksite Settings

Group by:

- The whole worksite on one row
- One week per row
- One day per row
- One square per row
- One cell per row
- More than one square per row

Set the desired square size

X-direction:

Y-direction:

Additional search criteria:

Date range:

First day:

maaliskuu 2013							
	ma	ti	ke	to	pe	la	su
9	25	26	27	28	1	2	3
10	4	5	6	7	8	9	10
11	11	12	13	14	15	16	17
12	18	19	20	21	22	23	24
13	25	26	27	28	29	30	31
14	1	2	3	4	5	6	7
Today: 5.3.2013							

Last day:

maaliskuu 2013							
	ma	ti	ke	to	pe	la	su
9	25	26	27	28	1	2	3
10	4	5	6	7	8	9	10
11	11	12	13	14	15	16	17
12	18	19	20	21	22	23	24
13	25	26	27	28	29	30	31
14	1	2	3	4	5	6	7
Today: 5.3.2013							

Area:

X1: X2:

Y1: Y2:

Z1: Z2:

Other searches:

Abnormal cells:

- Binder in a too high
- Binder is not enough
- Mixed with too little
- Removed cells

The machine searches

PF Name:



Report example

Site	Date	Binder	Total	Total volume	Feeding time	Mixing time
piha3	22.11.2012 - 14.12.2012	vesi	6187 kg	306 m ³	00:52:13	00:00:00

Grid [x,y]	Date	Binder [kg/m ³]	Binder % [OK/NO]	Total amount [kg]	Total volume [m ³]	Feeding time [hh:mm:ss]	Mixing time [hh:mm:ss]	Mixing % [OK/NO]	Number of cells	The number of cells removed	Flow [kg/s]	Pressure [bar]	Machine
1,1	14.12.2012	301	OK	301	1	00:00:00	00:04:52	NO	1	0	#Error	#Error	7
2,1	22.11.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
7,1	22.11.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
9,1	22.11.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
18,1	14.12.2012	1518	OK	1518	1	00:00:00	00:03:57	NO	1	0	#Error	#Error	7
24,1	14.12.2012	10	NO	10	1	00:00:00	00:00:01	NO	1	0	#Error	#Error	7
27,1	14.12.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
29,1	14.12.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
31,1	14.12.2012	12	NO	12	1	00:00:00	00:00:01	NO	1	0	#Error	#Error	7
18,2	14.12.2012	0	NO	0	1	00:00:00	00:03:02	NO	1	0	#Error	#Error	7
19,2	14.12.2012	0	NO	0	1	00:00:00	00:01:35	NO	1	0	#Error	#Error	7
31,2	14.12.2012	69	OK	69	1	00:00:00	00:00:10	NO	1	0	#Error	#Error	7
2,3	22.11.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
6,3	22.11.2012	12	NO	12	1	00:00:00	00:00:01	NO	1	0	#Error	#Error	7
7,3	22.11.2012	12	NO	12	1	00:00:00	00:00:01	NO	1	0	#Error	#Error	7
8,3	22.11.2012	13	NO	13	1	00:00:00	00:00:01	NO	1	0	#Error	#Error	7
9,3	22.11.2012	5	NO	5	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
10,3	22.11.2012	5	NO	5	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
11,3	22.11.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
16,3	14.12.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
17,3	14.12.2012	0	NO	0	1	00:00:00	00:00:01	NO	1	0	#Error	#Error	7
18,3	14.12.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7
1,4	22.11.2012	0	NO	0	1	00:00:00	00:00:00	NO	1	0	#Error	#Error	7



ALLU 3D Positioning System

- Eases the mixing work
 - better performance
 - homogenous mixing results
- Eases binder feeding
 - accurate binder distribution
 - reduces the consumption of the binder

HIGHER QUALITY AND BETTER JOB SITE ECONOMY CAN BE REACHED



QUALITY DO MATTER

*PROCESSES
and
MONEY*

