

Topcon

A faint, light gray outline of a world map is centered in the background of the slide. The map shows the continents of North America, South America, Europe, Africa, Asia, and Australia, with some internal details like coastlines and major islands.

*The Leading Provider of
Optical and Positioning Solutions*

It's time.

Topcon

- Founded in 1932
- Major shareholder: Toshiba
- Topcon business units:
 - Topcon Positioning Systems
 - Topcon Medical
 - Topcon Industrial & Optics
- Developed many “World’s First” products and technology

X20 Multifunctional Console



System Software **Windows XP professional**
1 Ghz processor
512 Mb RAM
2Gb solid state drive
128Mb thumbdrive

Display & Touch Screen
8.4"/21.3 cm TFT active matrix color
indoor/outdoor display with resistive touch screen
SVGA 800x600 pixels
32 bit color

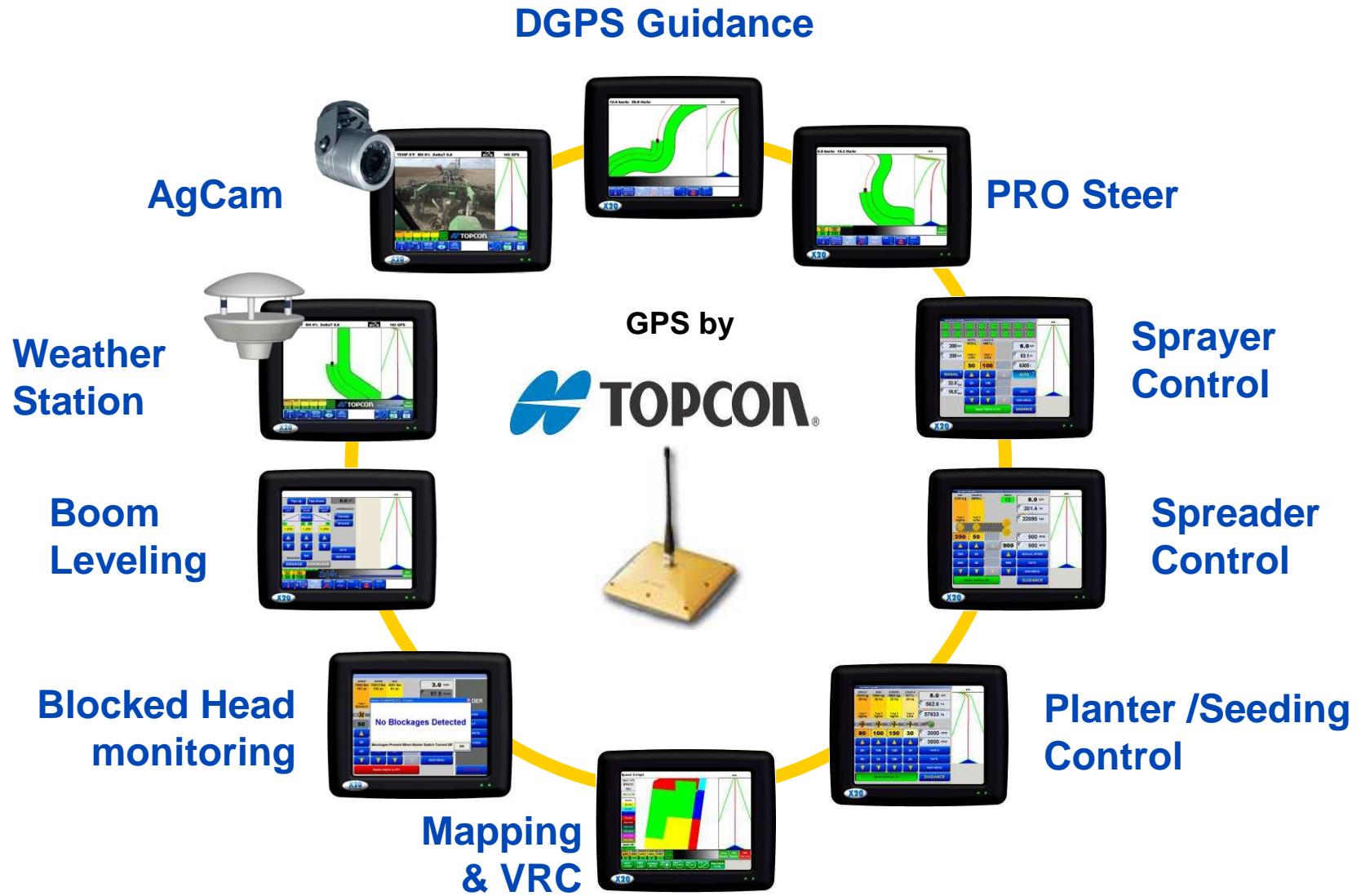




Topcon's Solution



The Other's Solution



Guidance and ProSteer

DGPS Guidance



PRO Steer

GPS by





ACCURACY ARE DETERMINED BY THE SIGNAL

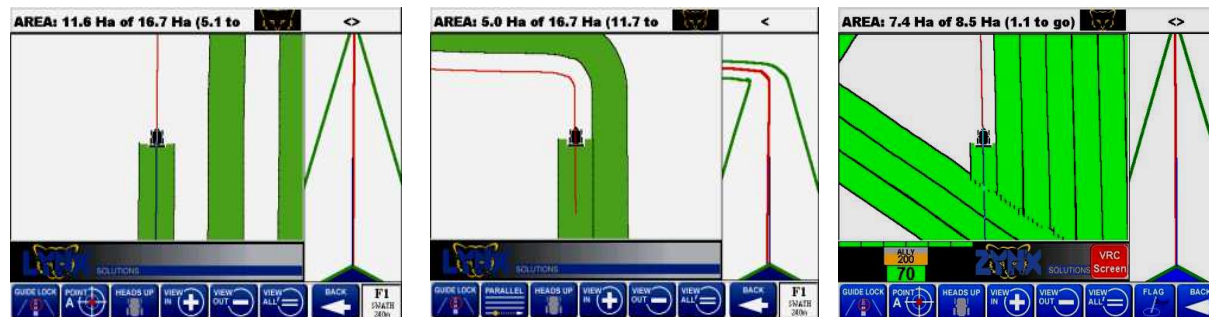
- L-BAND VBS – Sub 1 m
- L-BAND HP – Sub 10 cm
- RTK – Sub 2 cm

BASIC SOFTWARE

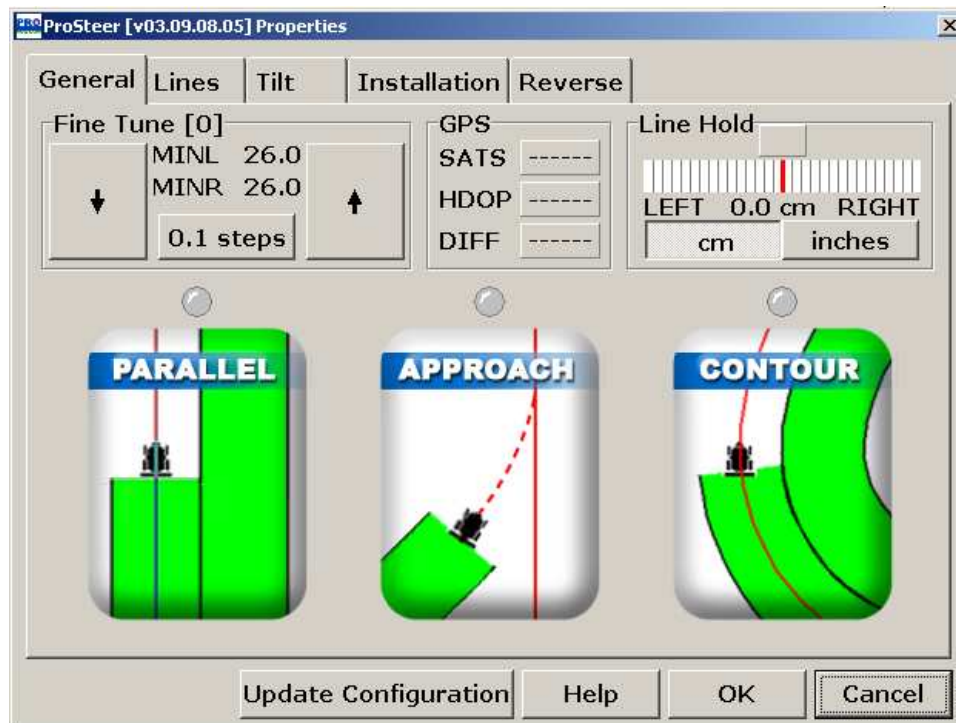
- STANDARD WITH X20
- PARALLEL TRACKING ONLY
- MOVING MAP
- VIRTUAL ROAD
- FLAGGING

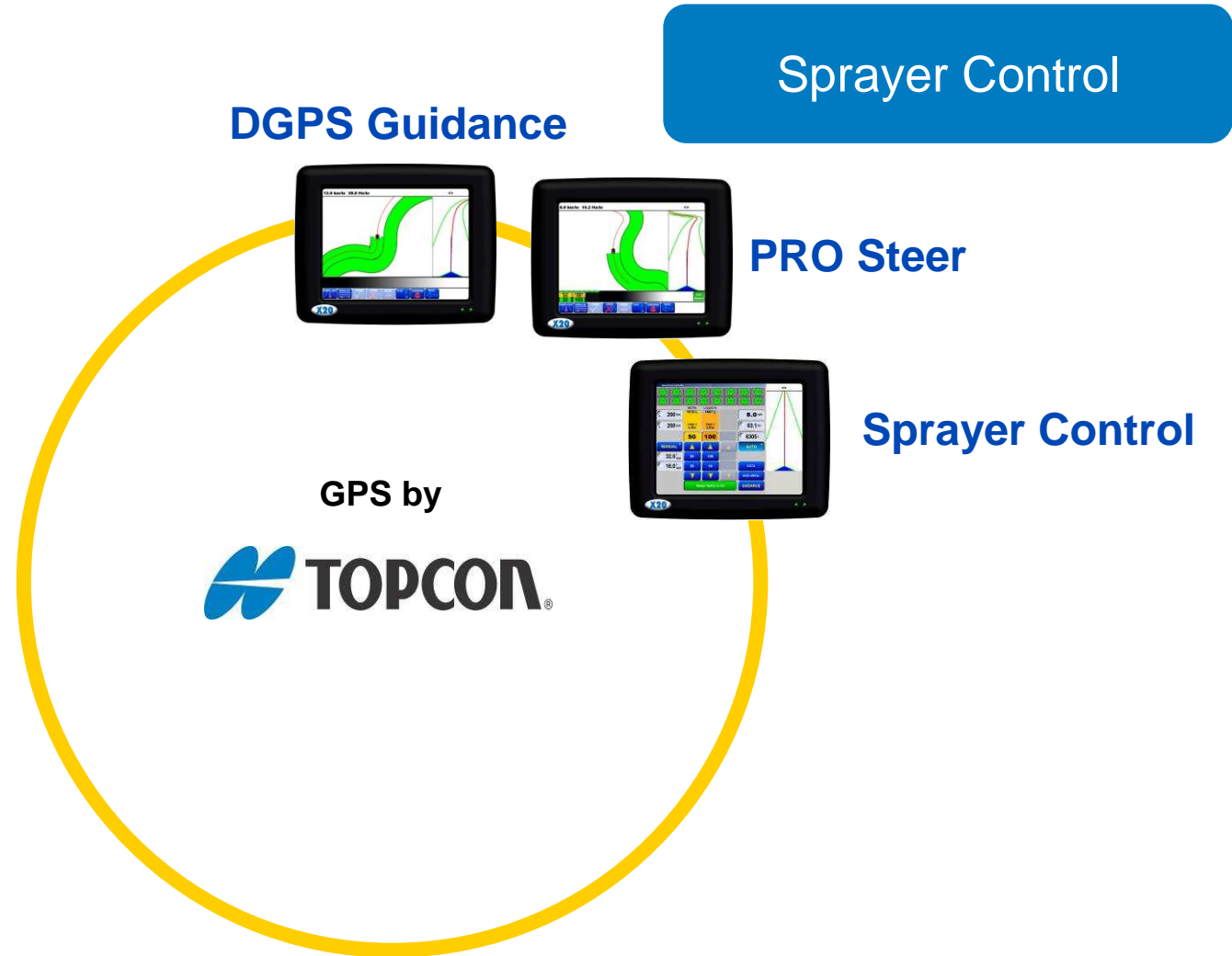
FULL GUIDANCE SOFTWARE

- PARALLEL, RACE & CONTOUR
- AUTO SECTION CONTROL
- POSSIBLE TO SAVE FIELDS



**UPGRADE FROM GUIDANCE
PARALLEL, ROUND AND ROUND, CONTOUR
COMPENSATE FOR TILT (MKII = 3 X GYRO'S)
FITTED TO A WIDE RANGE OF TRACTORS,
SPRAYERS, HARVESTERS**





Self Propelled Sprayers



Pull Behind Sprayers



3 POINT SPRAYERS



Spreader Control

DGPS Guidance



PRO Steer



Sprayer Control



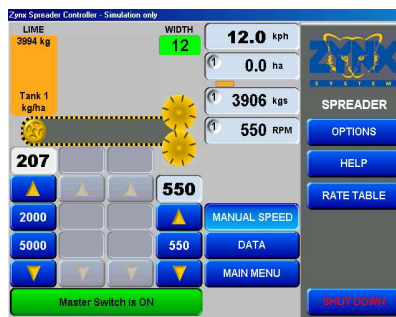
Spreader Control

GPS by





- COMPATIBLE WITH MOST SPREADERS
- SINGLE / DUAL BELT (PRODUCT) CONTROL
- SINGLE / DUAL SPINNER CONTROL
- CONTROL REGULATING & PROPORTIONAL VALVES
(SOURCE, RAVEN, MICROTRAK, DICKEY JOHN, DANFOSS.....)
- HYDRAULIC TEMPERATURE SENSORS
- CLUTCH DUMP
- CALIBRATE ONLY ONCE FOR EACH PRODUCT
- VARIABLE RATE CONTROL THROUGH MAPLINK
- COMBINE WITH GUIDANCE FOR ASC



Planter / Seeding Control

DGPS Guidance



PRO Steer



Sprayer Control



Spreader Control



Planter Seeding Control

GPS by
 TOPCON®





CONTROL ELECTRIC MOTORS (50NM)

CONTROL PROPORTIONAL & REGULATING VALVES
(HYDRAULIC & CHEMICAL & NH3 GAS)

CONTROL ACTUATORS

MULTI PRODUCT CONTROL (5) ALL AT ONCE

SEED, DRY- / LIQUID FERTILIZER, CHEMICALS & NH3 GAS

ADAPTABLE TO A WIDE RANGE OF IMPLEMENTS

MULTIPLE FAN MONITORING (2) PRESSURE & SPEED

VARIABLE RATE CONTROL TROUGH MAPLINK



MapLink / VRC Control

DGPS Guidance



PRO Steer



Sprayer Control



Planter Seeding Control



Spreader Control

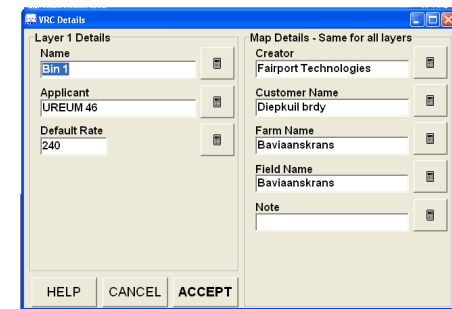
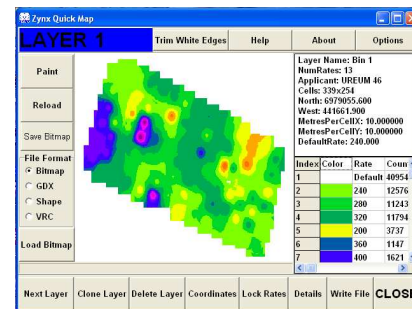
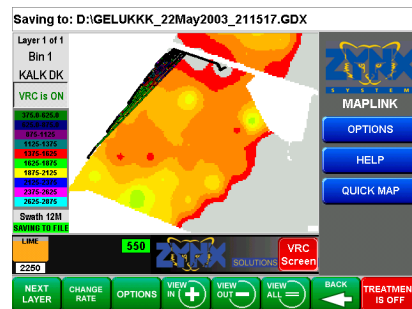
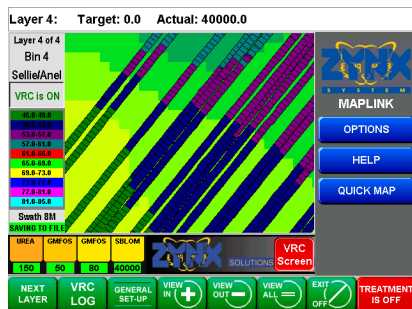
GPS by



Mapping



- LINK WITH CONTROLLER SOFTWARE FOR VRC.
- MULTIPLE LAYERS CAN BE MAPPED (13).
- DISPLAY PRESCRIPTION ON-TIME (TARGET).
- LOG & PLOT APPLICATION ON-TIME (ACTUAL).
- SHOW POSITION OF THE IMPLEMENT IN THE FIELD.
- SAVE DATA ON-TIME (BY TIME OR DISTANCE).
- CAN IMPORT A RANGE OF FILE TYPES TO GENERATE PRESCRIPTION MAPS – XML (VRC), SHP, BMP, GDX.
- CAN CHANGE PRESCRIPTIONS FILES IN THE FIELD.
- CAN BE USED TO CAPTURE FIELD BORDERS.



VRC FILE LOADED AND DATA LOGGED

Saving to: D:\Liddata\Otto X20\Lynx\Field_Data\JBT Boerdery\L04 KK_06Nov2007_212246.GDX

Layer 1 of 1
Layer 1
BKALS_R1

VRC is ON

0.0-450.0
450.0-900.0
900-1350
1350-1800
1800-2250
2250-2700
2700-3150
3150-3600
3600-4050
4050-4500

Swath 14M

SAVING TO FILE

Lime	0.0
9626	0.0
200	

MAPLINK

OPTIONS

HELP

QUICK MAP

NEXT LAYER

VRC LOG

GENERAL SET-UP

VIEW IN

VIEW OUT

VIEW ALL

EXIT

TREATMENT IS OFF

VRC Master

GUIDANCE

Blocked Head Monitoring

DGPS Guidance



PRO Steer



Sprayer Control



Planter Seeding Control



Spreader Control

GPS by
 TOPCON



Blocked Head monitoring



Mapping





Blocked Head Monitor ECU



Blocked Head Sensor



Boom Leveling

DGPS Guidance

PRO Steer

Sprayer Control

Planter Seeding Control

Spreader Control

Fertilizer Control

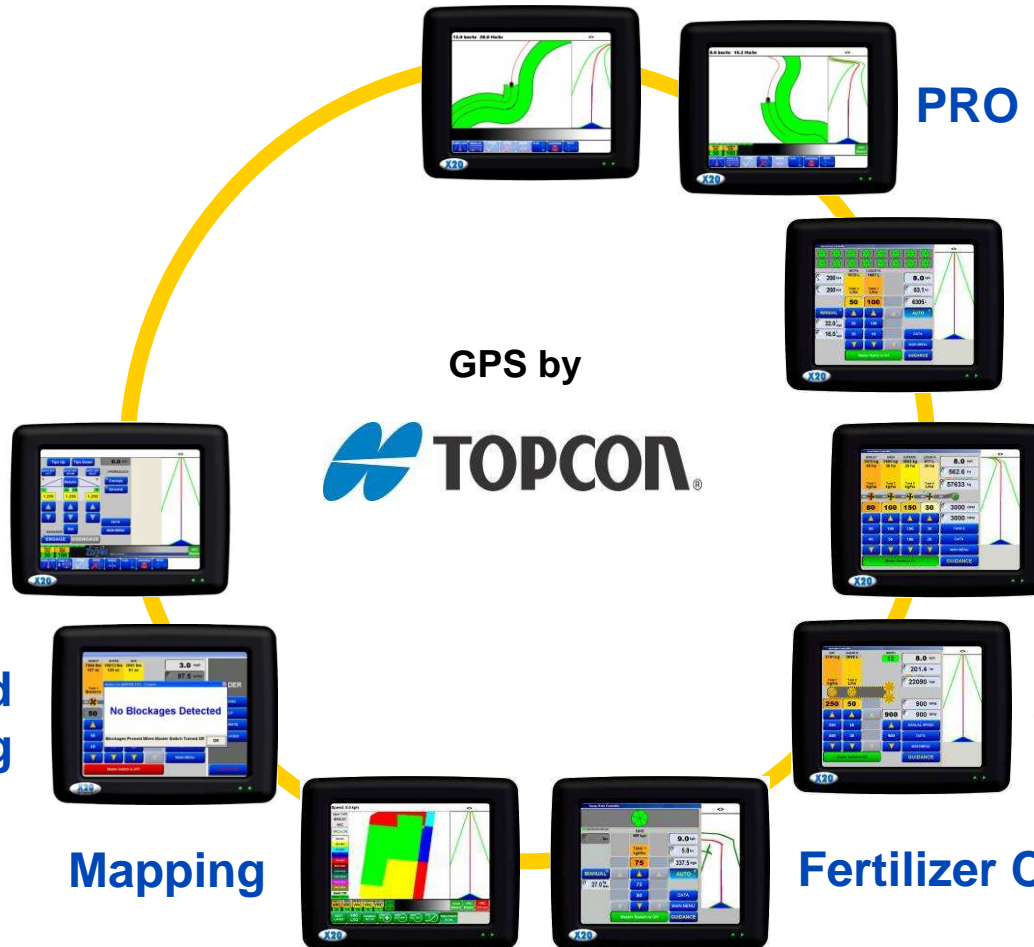
GPS by



Boom Leveling

Blocked Head monitoring

Mapping





Weather Station

DGPS Guidance

PRO Steer

Sprayer Control

Planter Seeding Control

Spreader Control

Fertilizer Control

GPS by

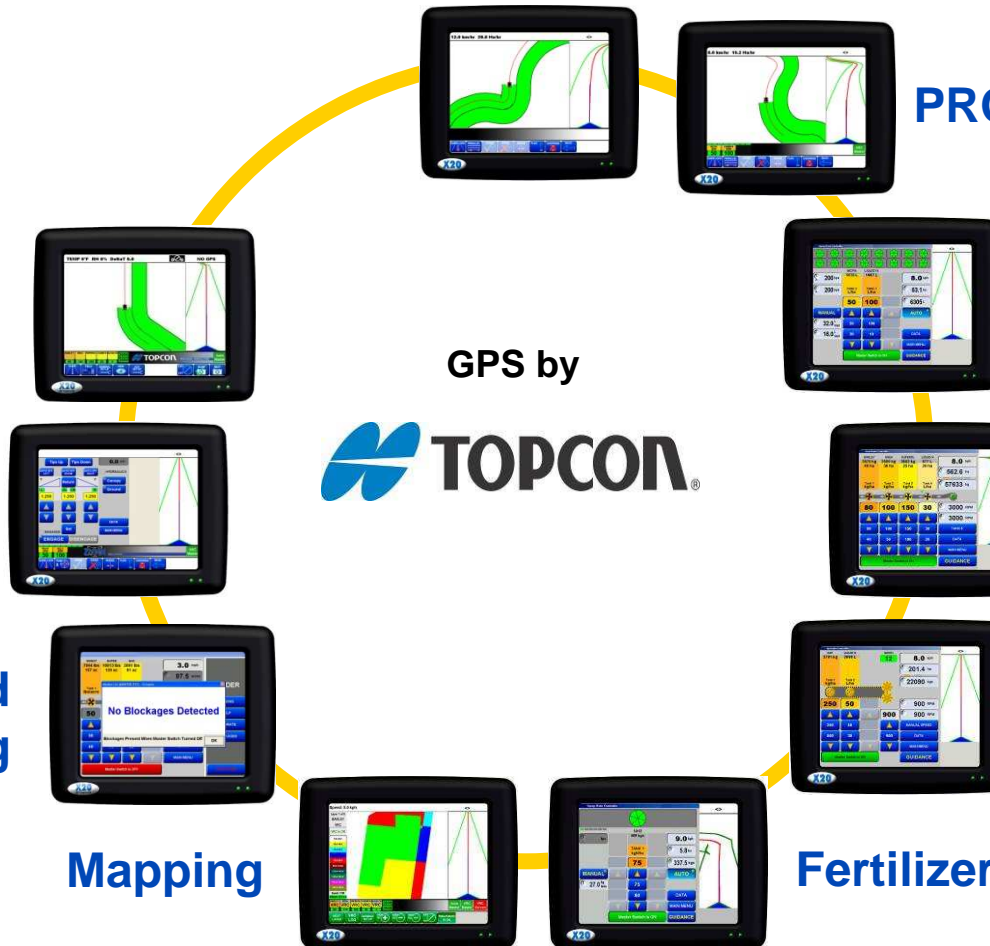


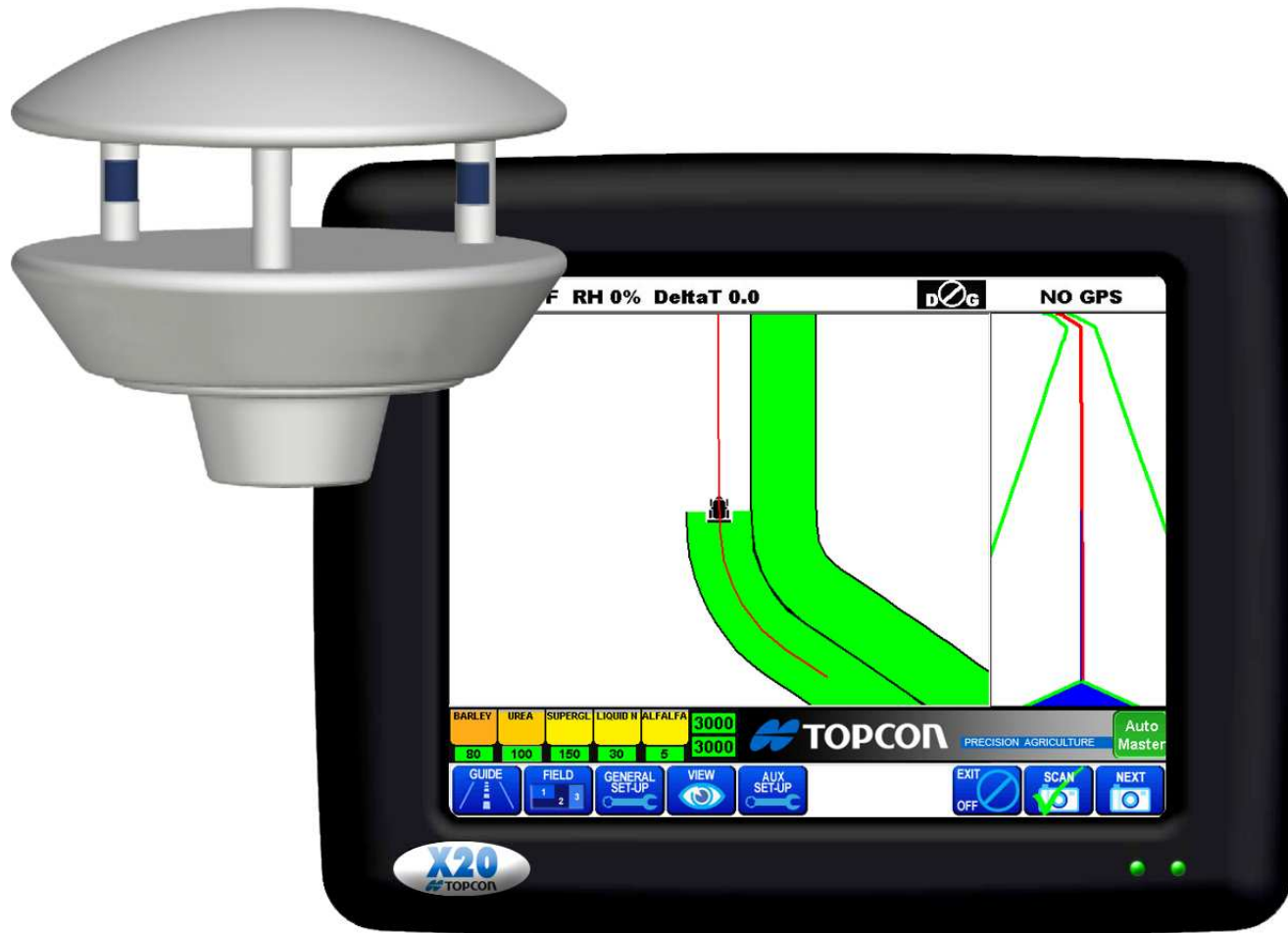
Weather Station

Boom Leveling

Blocked Head monitoring

Mapping





Hardware Requirements



- X-20 consoles only.
(not X-15 or X-10's)
- Any X-20 console below serial # A2010060472 will need to be returned to TPA. For CANmodification.
- \$200 AUD for modification to run weather station.



WS: n/a T: 0°C RH: 0% DT: n/a

DISENGAGED

Weather Station Setup (Weather Monitor 0.2.15.1)

Weather Stn Enabled: Warnings Enabled:

Warnings

Low DeltaT: 2.0 High DeltaT: 8.0 High Wind: 20 kph High Temp: 28 °C

No Of Repeats: 3 Repeat Time: 10 secs

OK CANCEL

SOLUTIONS

GUIDE FIELD GENERAL SET-UP VIEW WEATHER EXIT OFF

Steering: Engaged

ENGAGED

SOLUTIONS

GUIDE FIELD GENERAL SET-UP VIEW WEATHER EXIT OFF

Zynx GDx Viewer - C:\Lynx\Field_Data\SAND WEATHER.gdx

Merge File Locate Filter Animate Backup Template

Weather Data Details

Avg. Wind Speed 15 km/h
Avg. Wind Dir. S
Avg. Temperature 11 °C
Avg. Humidity 45 %
Avg. DeltaT 5.0

Layer: Wind Speed (km/h)

0.0-5.0
5.0-10.0
10.0-15.0
15.0-20.0
20.0-25.0
25.0-30.0
30.0-35.0
35.0-40.0
40.0-45.0
45.0-50.0

Start Latitude: 34° 34' 16.14895" S
Start Longitude: 138° 34' 29.96382" E

250 m 1250 m

Load File Close File Save File Print Zoom All Zoom In Zoom Out Options Close

Ag Cam

DGPS Guidance

AgCam

PRO Steer

Weather Station

Sprayer Control

Boom Leveling

GPS by
 TOPCON

Planter Seeding Control

Blocked Head monitoring

Spreader Control

Mapping



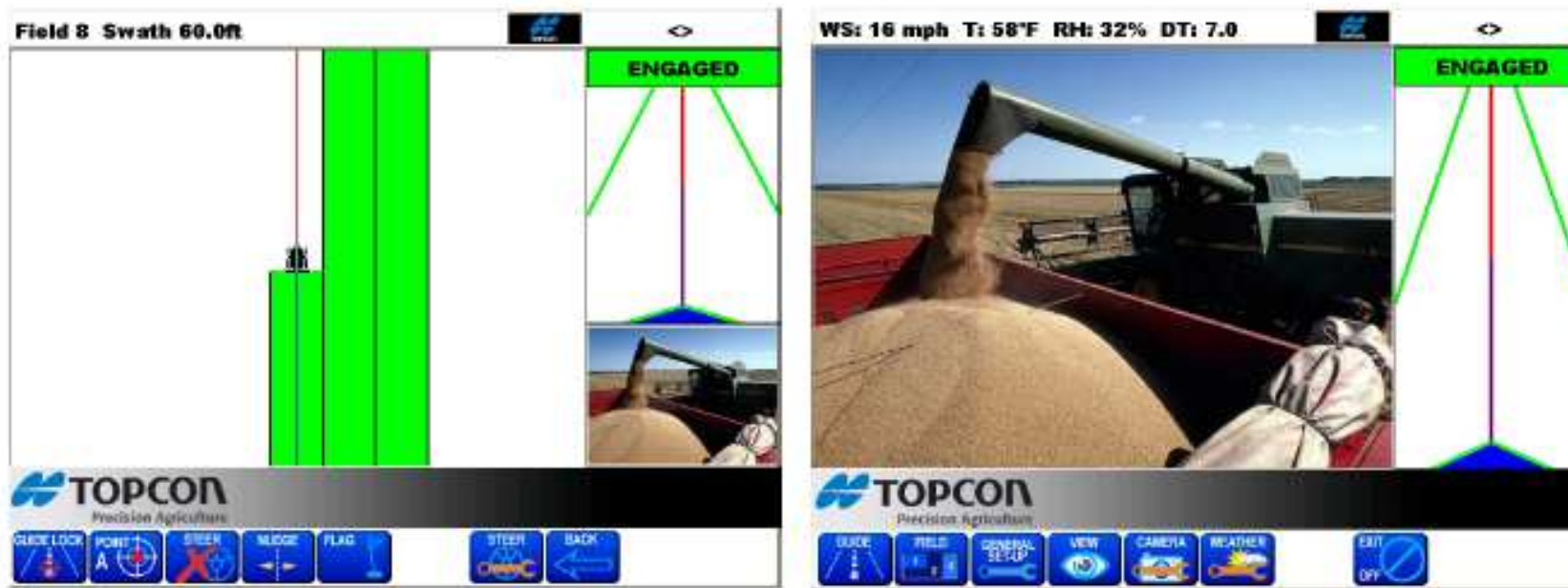
Hardware requirements



- X-20 consoles only.
(not X-15 or X-10's)
- X-20 consoles already in field will require drivers to be loaded as per the operator's manual.



Ag Cam Operating Screen



- Ag cam picture can be minimised & maximised at any time while on the guidance screen.

The X20 terminal - RESULTS

FARM RECORDS SHOW LIME SAVING UP TO 50% . UFS SHOW AVERAGE SAVING OF 19.2% ON LIME

Farming unit	Average lime application Conventional (ton/ha)	Average lime application VRA (ton/ha)	% Saving on lime application	Minimum applied with VRA (ton/ha)	Maksimum with VRA (ton/ha)
1	3	0.8	73 %	0.3	2.2
2	2	2.0	0 %	0.5	3.2
3	2	2.0	0 %	0.5	3.2
4	2	1.7	15 %	0.65	3.0
5	2	0.6	70 %	0.5	3.25
6	2	2.0	0 %	1.0	4.0
7	2	1.2	40 %	0.5	3.5
8	3	1.7	43 %	0.0	0.0
9	2	1.7	15 %	0.5	4.0
10	2	3.7	-85 %	0.46	6.0
11	2	1.2	40 %	0.5	3.5
Average			19,2%		

The X20 terminal - RESULTS

NO PRE-ROW MARKING = SAVING R25-R35/HA

**PRODUCERS CLAIMED OVER SPRAYING CAME DOWN
8-16 % POINTS**

**MORE EFFECTIVE USE OF FERTILIZER WITH FARMING RECORDS
SHOW A 21% BETTER GROSS MARGIN ON FERTILIZER COST (UFS)**

Farming unit	Change in income above fertilizer cost / ha (%)				Average change in income above fertilizer cost / ha / jaar
	Year 1	Year 2	Year 3	Year 4	
1	43,4%	53,4%	30,0%		42,3%
2	82,4%	254,8%	37,0%		124,7%
3	-1,1%	7,6%	30,1%		12,2%
4	62,5%	2,8%	63,4%		42,9%
5	17,5%	-28,7%	81,8%	21,4%	23,0%

The X20 terminal - RESULTS

PRODUCERS RECORDS SHOW YIELD INCREASES BETWEEN 15.4 – 30.8% WITH VRC

**FARM RECORDS SHOW MORE EFFECTIVE USE OF WATER
(HIGHER PRODUCT YIELD PER MM & HIGHER NET INCOME / MM)**

Actual Records	Konv (5 year)	VRA (3 year)	Gain / Loss
Yield (kg/ha)	4130.00	5344.97	29.42%
Rainfall (mm)	544.00	506.00	-6.99%
Yield (kg/mm)	7.59	10.56	39.14%
Production cost (ZAR/ha)	2743.00	3028.33	10.40%
Product Price (ZAR/ton)	848.40	919.33	8.36%
Gross income (ZAR/ha)	3503.89	4913.80	40.24%
Net income (ZAR/ha)	760.89	1885.47	147.80%
Net income (ZAR/mm)	1.40	3.73	166.41%



Color Screen

**On Screen
Mapping**

**Simple
Operation**

**Multiple
Guidance
Patterns**

**Rugged Design
for Field Use**



KEE also manufacture a range of non GPS monitors and controllers for agriculture
THE EAGLE RANGE

EAGLE is a non GPS Controller developed through input and suggestions by farmers around the world.

- **Advanced Spray Rate and Planter Controller Versions**
- **Large Visual Display**
- **Audio and Visual Alarms**
- **Easy to Program / Simply Operation**
- **Designed for custom engineered OEM requirements**
- **Directly compatible with ZYNX**



Planter Controller



Sprayer Controller with OEM remote control

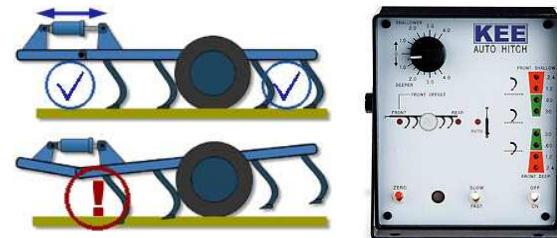


KEE also manufacture a range of non GPS monitors and controllers for agriculture

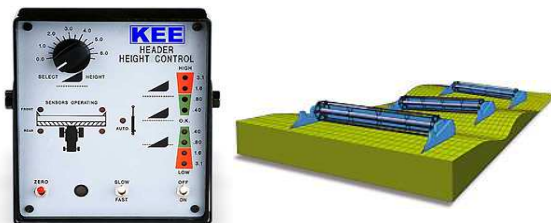
“BLOCKED HEAD MONITORING”



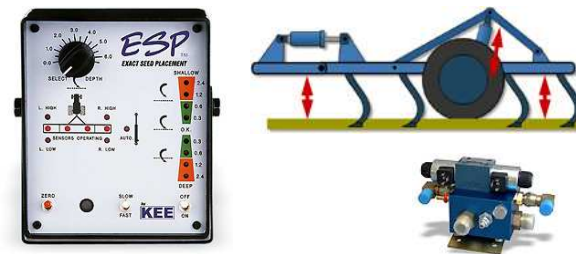
“AUTO HITCH”



“HEADER LEVELING”



DEPTH CONTROL





www.topconpa.com