

# *Cybersecurity in IoT and IIoT*

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# WHAT IS HACKING?

**Hacking is an  
attack against  
assumptions.**

**Hacking is the practice of modifying the features of a product in an attempt to make it perform in ways not originally intended or even thought possible.**

# WHO ARE THE HACKERS?











**WELCOME TO A  
WORLD RUN BY  
SOFTWARE**





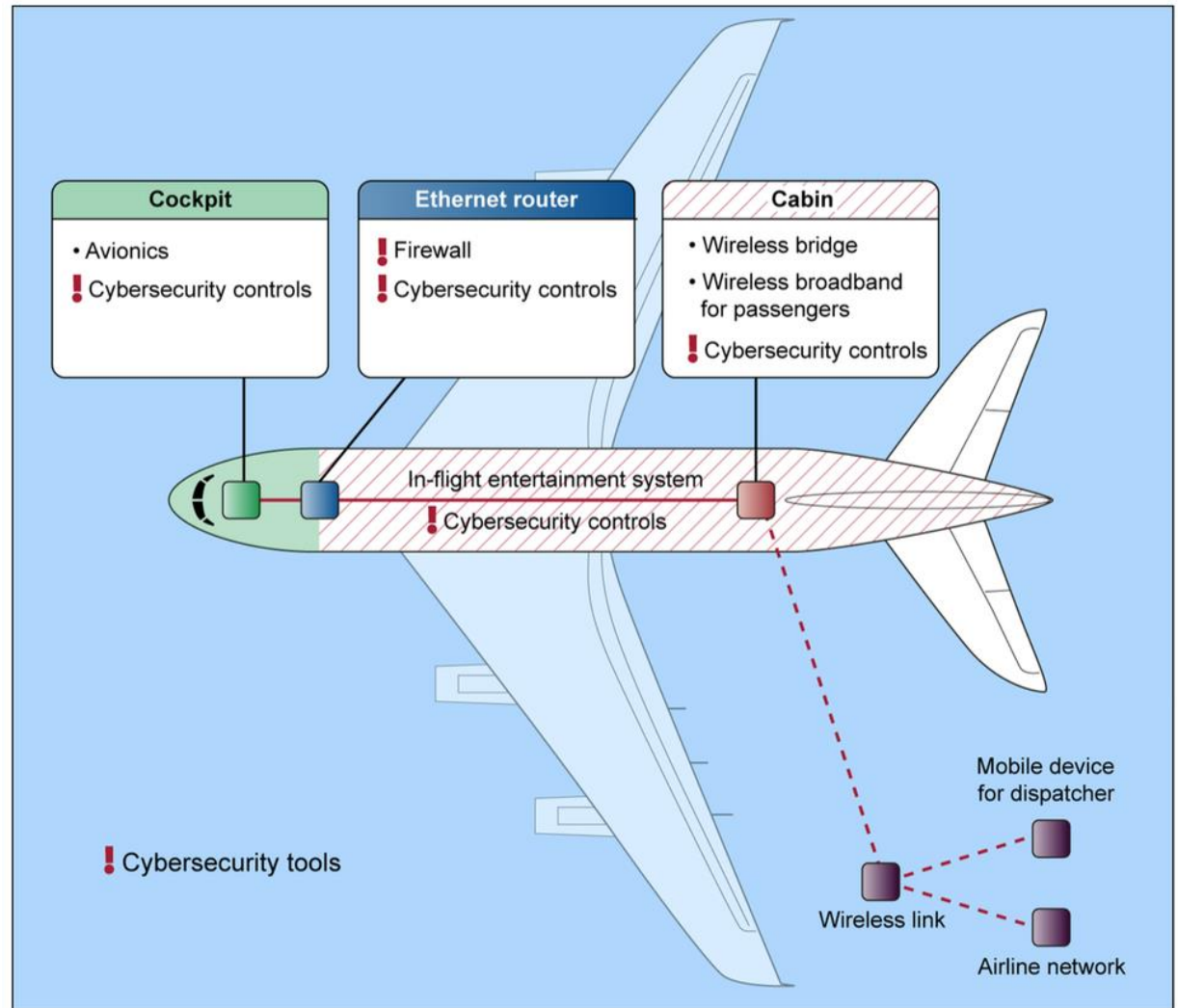


April 2015

# AIR TRAFFIC CONTROL

## FAA Needs a More Comprehensive Approach to Address Cybersecurity As Agency Transitions to NextGen

**Figure 4: Aircraft Diagram Showing Internet Protocol Connectivity Inside and Outside of Aircraft**



Source: GAO. | GAO-15-370

“

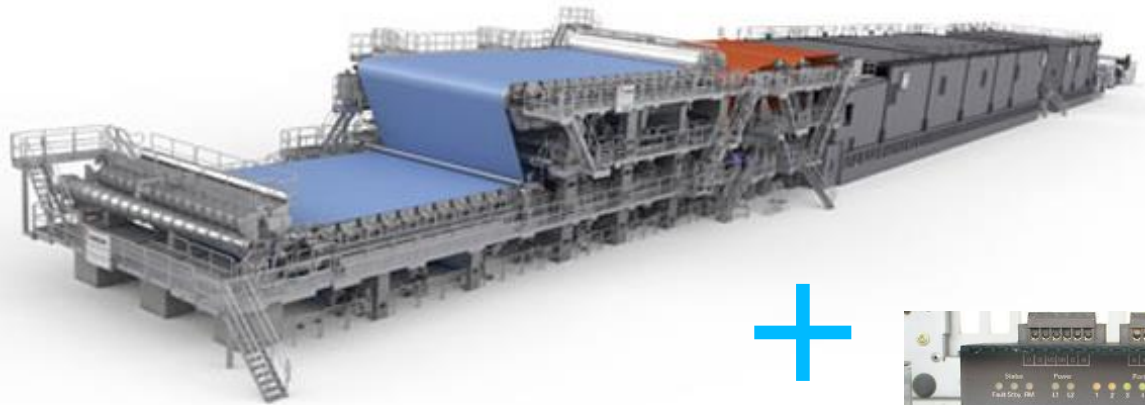
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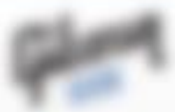
**Ja kun yritys sitten haluaa lähiverkon, se palkkaa teekkarin, joka tulee porakoneen kanssa asentamaan.**

**Seurauksena on katastrofi.**

**—prof. Kauko Rahko, 1993**







Product Features

Body and Neck

Body and Headstock

Hardware and Electronics

Accessories

Product Specs

Color

Material

Weight



the transition analog and digital in the system. Each of these six pickups in the 100-600 sends a signal from its individual string to the guitar's onboard, studio-grade preamps and converters, where it is converted from analog to digital and sent down a standard Ethernet cable to a proprietary block on the back for direct recording. From here, the player can route the output to be processed externally to create stereo imaging, the three bass and three individual signals - one to each of six amps, one to each of six channels on a mixing desk, or otherwise your imagination takes you. The 100-600 Pro Digital can feed's



# Internet of (Borken) Things



Dan Tentler

@Viss



Following

Phil, I think you're gonna have a bad time.

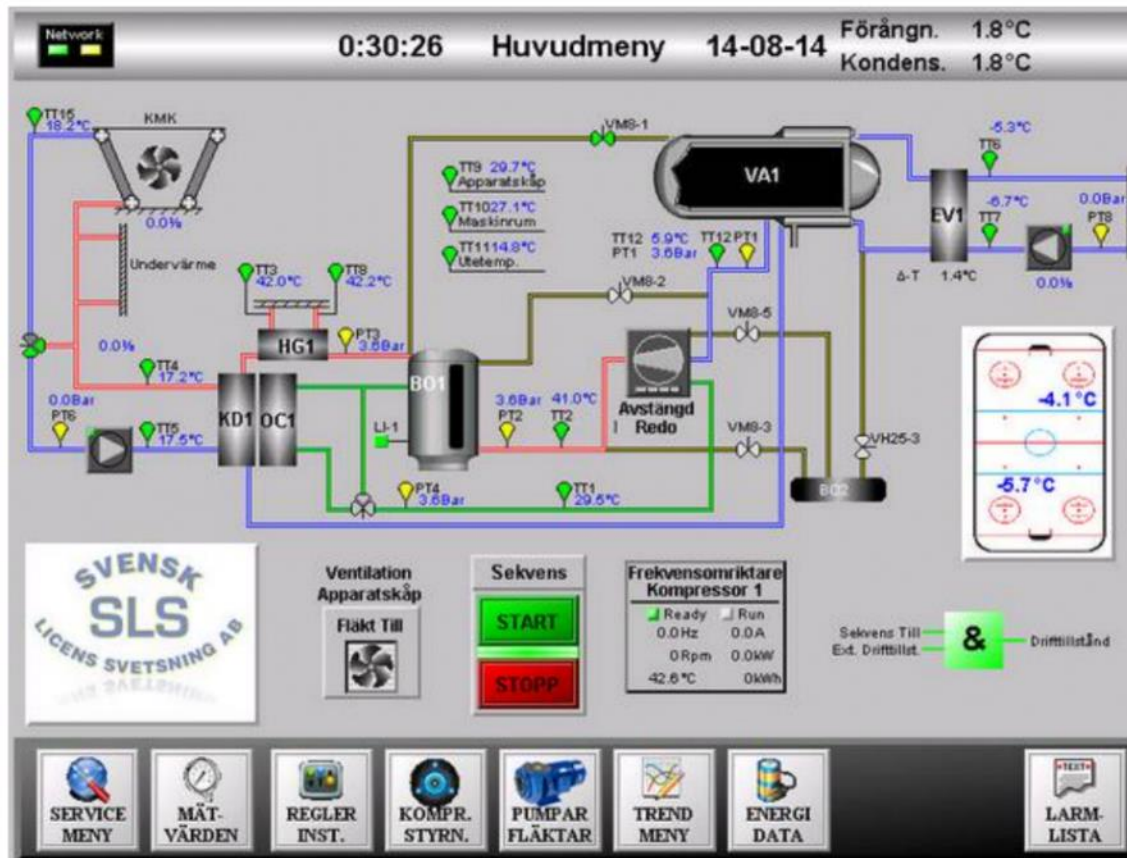
Reply Retweet Favorite Share More

The screenshot shows a smart home control interface for 'Phil's Office'. At the top, there are icons for Audio, Video, and Lights, followed by the title 'Phil's Office' and icons for Home, Irrigation, and Alarm. On the right side of the top bar are volume control icons. The main interface is divided into two sections. The left section displays a temperature of 68° and a room temperature of 74°. Below this are controls for a fan, a snowflake icon, and an 'OFF' button. The right section is titled 'Phil's Office Lights' and contains a grid of buttons: 'Eliz', 'Phil', 'Wash Wall', 'Entry', 'Stairs', and 'Bath'. At the bottom right of this section is a large red 'Off' button.





Dan Tentler  
OH FUCK. Is this a hockey rink?! :D



RETWEETS  
**12**

FAVORITES  
**17**



Navigation icons: back, refresh, star, and a 'Hide photo' button.



**Dan Tentler**

**Dear medical infosec device researchers: hold onto your butts! a hospital bed with what appears to be a live patient**



RETWEETS  
**125**

FAVORITES  
**61**







**Dan Tentler**

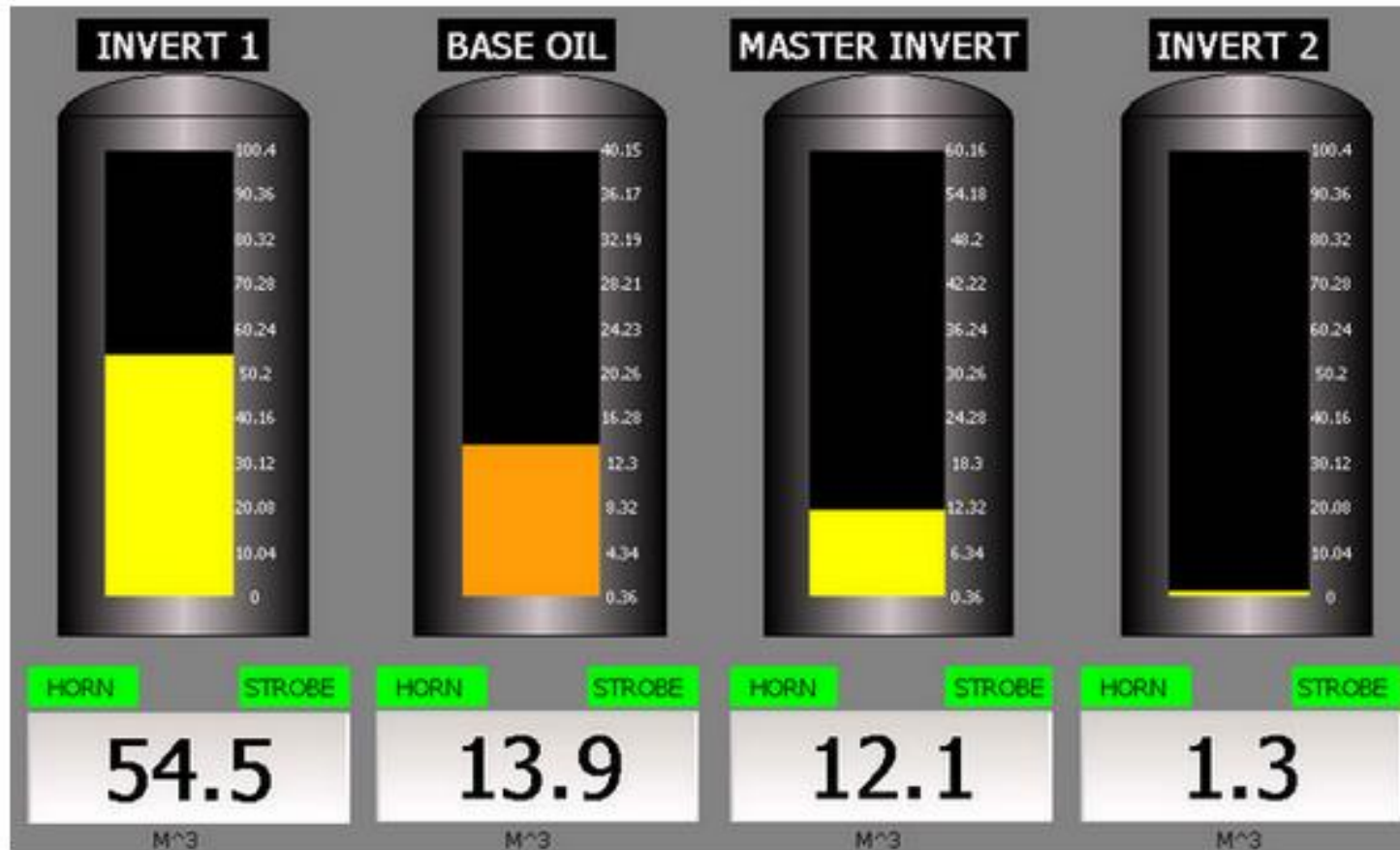
@Viss



Follow

an oil field?

Reply Retweet Favorited More





Dan Tentler

@Viss



Follow

a wheat silo!

Reply Retweet Favorite More

New Load		Wheat	
Tonnes	0	Temp (°C)	0.0
Moisture (%)	0.0	Protein (%)	0.0

Inloaded	
Tonnes	222
Temperature (°C)	29.9
Moisture (%)	10.0
Protein Content (%)	11.5

Press "Initialize" to start a new Aeration Process

Press "Add Load" to add grain to the store

For unloading enter a negative value or press "Empty Silo" for a full unload

Back





Dan Tentler

@Viss

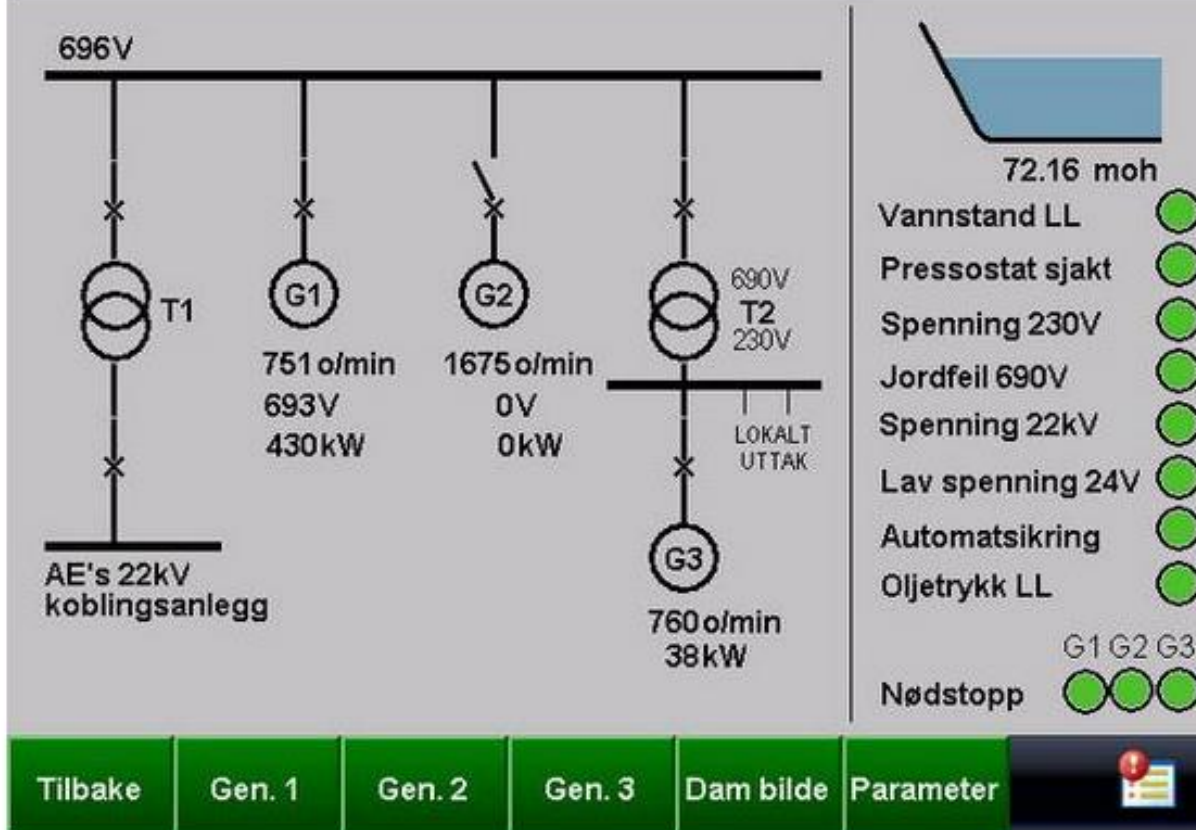


Following

Um.. a dam? Swedish? Dutch?

Reply Retweet Favorite Share More

Hovedbilde





Dan Tentler

@Viss



Follow

NO! Is this a radio station?! :D nowai.

Reply Retweet ★ Favorited More







Dan Tentler

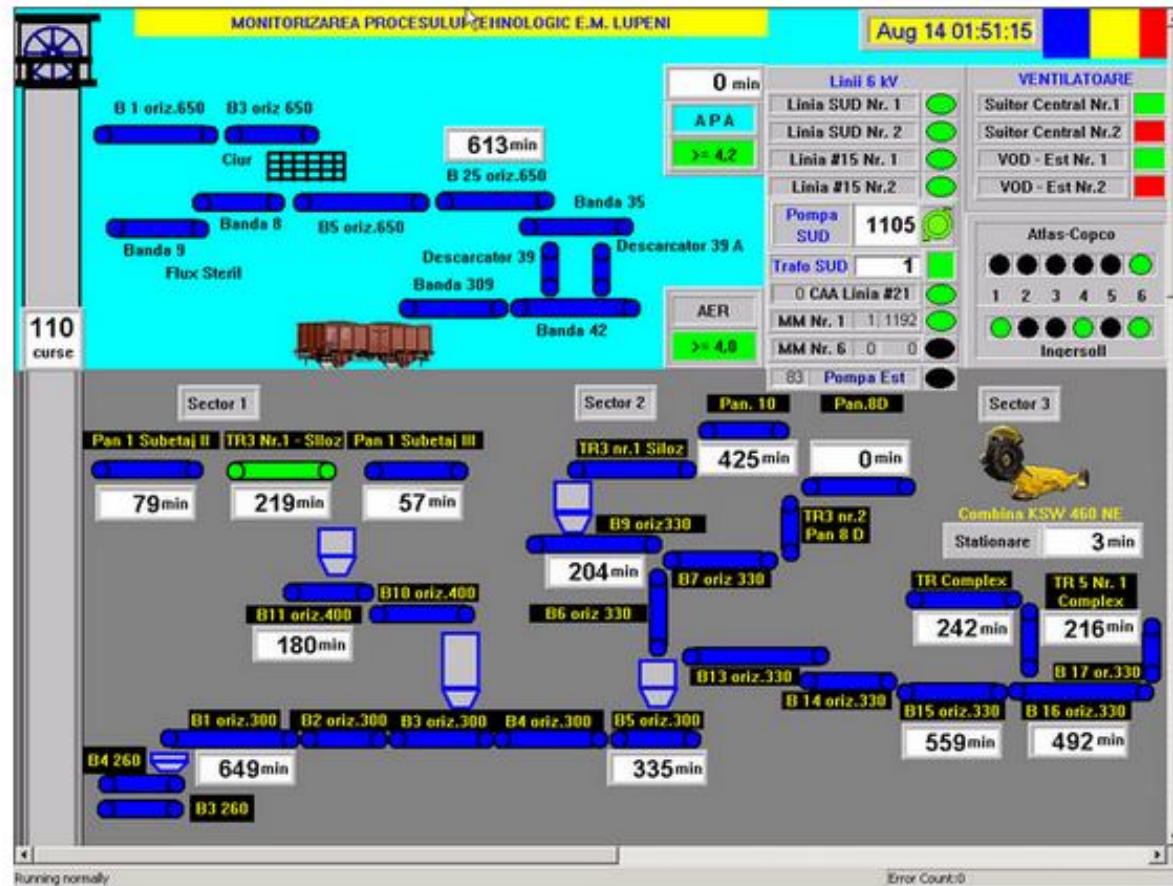
@Viss



Follow

I want to say this is a train control system, but I'm not sure. Italian maybe?

Reply Retweet Favorite More





Dan Tentler

@Viss



Following

Curtains. There are FUCKING CURTAINS on the internet.

Reply Retweet Favorite More





Dan Tentler

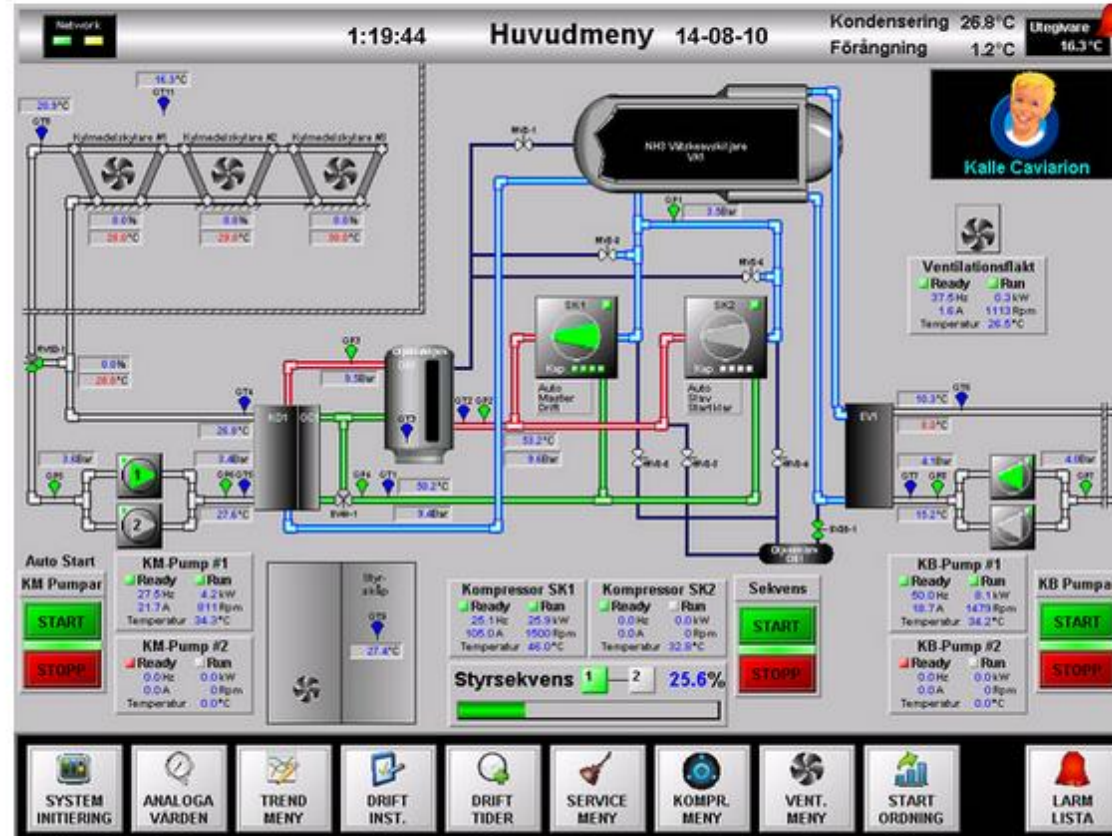
@Viss



Follow

hahaha the little face in the upper right makes this. FRIENDLIEST SCADA ON THE NET!

Reply Retweet Favorited More







Mikko Hypponen @mikko · Aug 18

VNC roulette: connects you to random open VNC servers somewhere on the net. [allsprk.com/vnc/](http://allsprk.com/vnc/)  
/by @ALLSPRK



446



310



Adm Selec

@selecadm



Follow

@mikko @ALLSPRK What the fuck have I done?

← → ↻ 🏠 [allsprk.com/vnc/](http://allsprk.com/vnc/)

Service in: -3506  
 WaterIN: Std. 80.0  
 Fern-Wartung aktiv  
 Gaspressure: -2.3 mbar  
 Venturi: 52.8 %  
 Charger Air Temp: 50.9 °C  
 WaterOt: 85.0 °C  
 LD Set: 0.318 bar  
 Spreizung: 5.0 °C  
 Charge Pressure: 0.274 bar  
 DK 57.8  
 Electric Power: 49  
 Target Power: 50  
 50KW E0834TE302  
 192.168.1.20

Do you really want to stop the motor?  
 At a stop the engine will be reduced to 0 slowly

Change nothing | MOTOR STOP !!

MOTOR START | Reduct 1  
 Full Power | Reduct 2  
 MOTOR STOP | MOTOR EMERG

Mode: MANUAL



**Mikko Hypponen** @mikko · Aug 18

VNC roulette: connects you to random open VNC servers somewhere on the net. [allsprk.com/vnc/](http://allsprk.com/vnc/)  
/by @ALLSPRK

← ↻ 446 ★ 310 ⋮



**Adm Selec**

@selecadm

@mikko @AL  
done?

← → ↻ 🏠 allsprk.com/vnc/

Service in	WaterIN	Fern-Wa
-3506	Std. 80.0	aktiv
Charger Air Temp	WaterOt	Fenster sc
50.9	*C 85.0	*C
LD Set	Spreizung	
0.318	bar 5.0	*C
Charge Pressure		
0.274	bar	
<b>AMG Display</b>		
Default position		
<b>Motor Control</b>		
MOTOR START	Reduct 1	
Full Power	Reduct 2	
MOTOR STOP	MOTOR EMERG	



**Erka Koivunen**

@ekoivune

Updated trblshoot manual:1) check fuel, 2) check spark, 3) check the internetz for pranksters. #IoT

**Mikko Hypponen** @mikko

Tip of the day: When you are connecting to a random open VNC on the internet, DO NOT STOP THE MOTOR. Just don't. [twitter.com/selecadm/statu...](https://twitter.com/selecadm/status...)

I am The Cavalry

Safer | Sooner | Together

# Unpatchable:

Living with a vulnerable implanted device

Marie Moe, PhD, Research Scientist at SINTEF



@MarieGMoe @iamthecavalry  
#safersoonertogether

Debugging me



SINTEF



# Product

???

# Profit

**Product**

**Product + Internet**

**? Profit ?**

# Product

## Turn Your Product into Service

# ! Profit !



**SWITCH  
ON  
FREEDOM**