



# Java at V2COM

Presentation for JCP EC

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One

# Our Business





# A story that started in 2002

V2COM was started to connect remote devices

V2COM is a leading provider of **Internet of Things** platform and Smart Systems solutions. Our offer includes **hardware, software and services** that can reduce financial losses and increase **process efficiency**, currently connecting **more than 1 million remote devices**.

To maximize the economic gains for our customers, our solutions are integrated with **legacy equipment and systems**, as well as provide an **open and modular architecture** that can incorporate future technology advancements.

Our award winning platform accelerates project deployments and boosts the **Return on Investment in IoT** for companies with complex processes and **distributed assets**.



Austin, Houston, Calgary,  
Sao Paulo, Florianópolis  
70 people



# Focus on Industrial Automation



V2COM has received more than 15 international awards



To distinguished companies that have taken Oracle's Java Embedded technologies to a new vertical market, are leveraging inherent Java capabilities such as security and portability to address industry challenges, or are building out a new product based on Oracle's Java Embedded technologies bringing innovation to the marketplace



The best WSN/IoT Application award went to the collaboration of V2COM, Gemalto M2M and Oracle, delivering flexible, smart grid solutions in Latin America, an excellent system-level solution to energy monitoring and management which effectively addresses client retrofit and payback concerns in addition to good system integration. (<http://www.idtechex.com/research/articles/idtechex-energy-harvesting-and-storage-usa-2013-award-winners-00006011.asp>)



To simplify and help CIOs navigate the IoT landscape, CIOReview is coming up with annual special edition on 50 Most Promising IoT Companies where a distinguished comprising of CEOs, CIOs, VCs, analysts including CIOReview editorial board will decide the '50 Most Promising IoT Companies 2014' in the U.S. CIO Review research team has analyzed over a 1000 companies providing IoT solutions for various industries.



Jointly instituted by the Wharton School of the University of Pennsylvania and Infosys Technologies, the Wharton Infosys Business Transformation Award (WIBTA) celebrated excellence and innovation in information technology with industry-wide impact. The Enterprise Business Transformation Award is granted to organizations that made the best use of IT for business transformation in their region. Past winners include: Amazon.com , Royal Bank of Scotland, YouTube, Wikimedia Foundation.



The Value Chain Awards, organized by M2M Magazine, honor the most successful corporate adopters of M2M technology and the team of solution providers that made their success possible. Four time winner: in 2006 with Ampla and in 2007 with Codensa, Chilectra and BR Distribuidora (<http://www.specialtypub.com/m2m/valuechain/>)



The M2M 100 is a list of the most important and influential machine-to-machine technology providers as determined by the editors of M2M magazine and its editorial advisory board. It is designed to provide a snapshot of the market as it exists today and the companies with the greatest impact on its direction. ([http://www.m2mmag.com/m2m\\_100/](http://www.m2mmag.com/m2m_100/)). V2COM is a 2008, 2009 and 2010 member of M2M 100, as well as 2010 CW100 (<http://www.connectedworldmag.com/CW100.aspx?id=VNDR080505075429910>).

# Great EcoSystem



V2COM builds better solutions

## Memberships



The Java Community Process (JCP), established in 1998, is a formalized mechanism that allows interested parties to develop standard technical specifications for Java technology. V2COM was voted for The Executive Committee (EC), that is the group of Members guiding the evolution of Java technology in the Java Community Process (JCP). The EC represents both major stakeholders and a representative cross-section of the Java Community. (<https://jcp.org/en/participation/committee>)



The Industrial Internet Consortium (IIC) was founded in March 2014 to bring together the organizations and technologies necessary to accelerate growth of the Industrial Internet by identifying, assembling and promoting best practices. Membership includes small and large technology innovators, vertical market leaders, researchers, universities and governments. V2COM was one of the initial members os the Consortium.

## Partnerships



# Servicing Major Utilities In LATAM



Both state owned and private companies



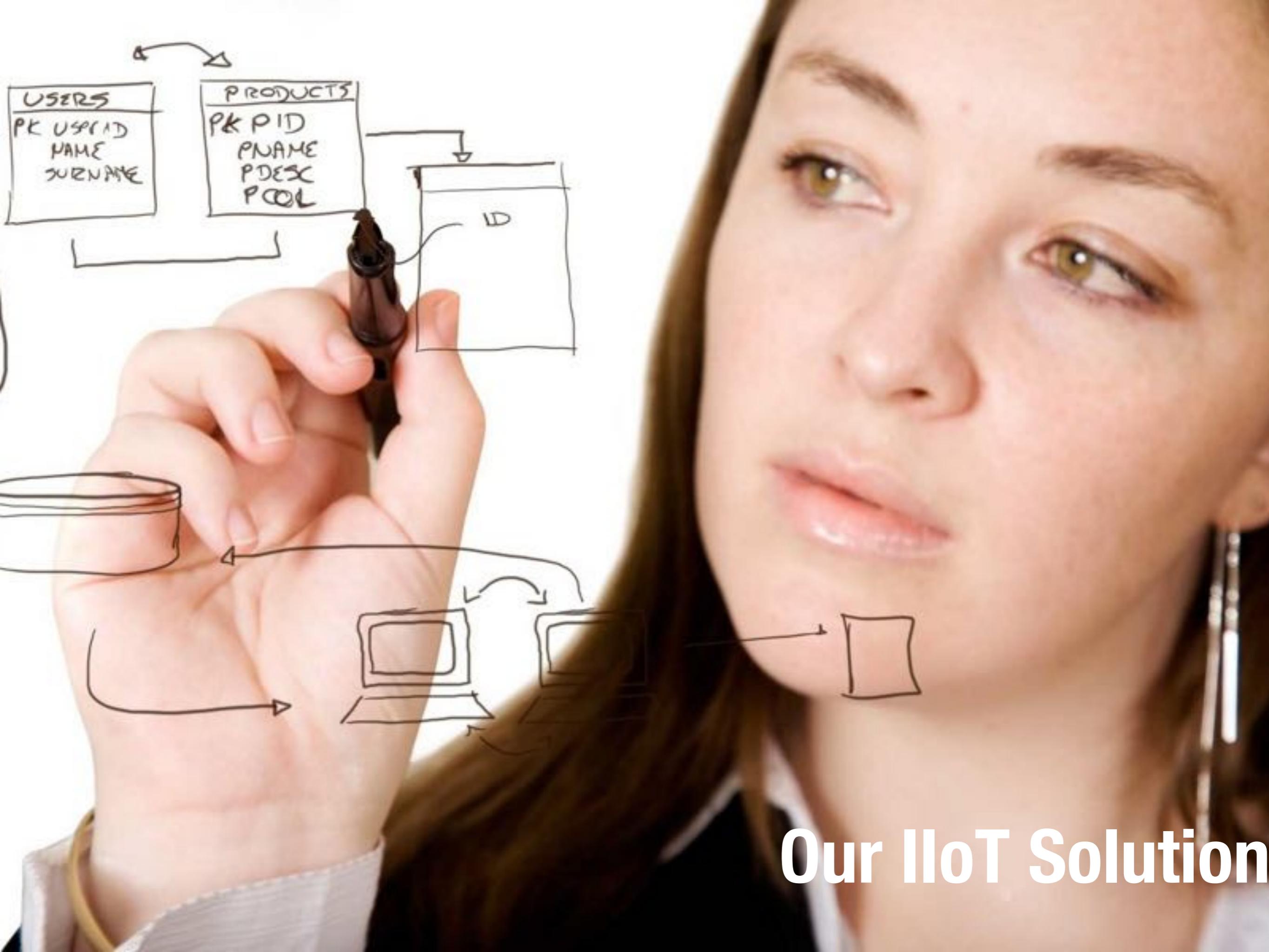
+ 30 Companies

+ 1 million devices

+ USD3 billion/year\*

+ 30 GW controlled





# Our IIoT Solution



# Connecting Easily

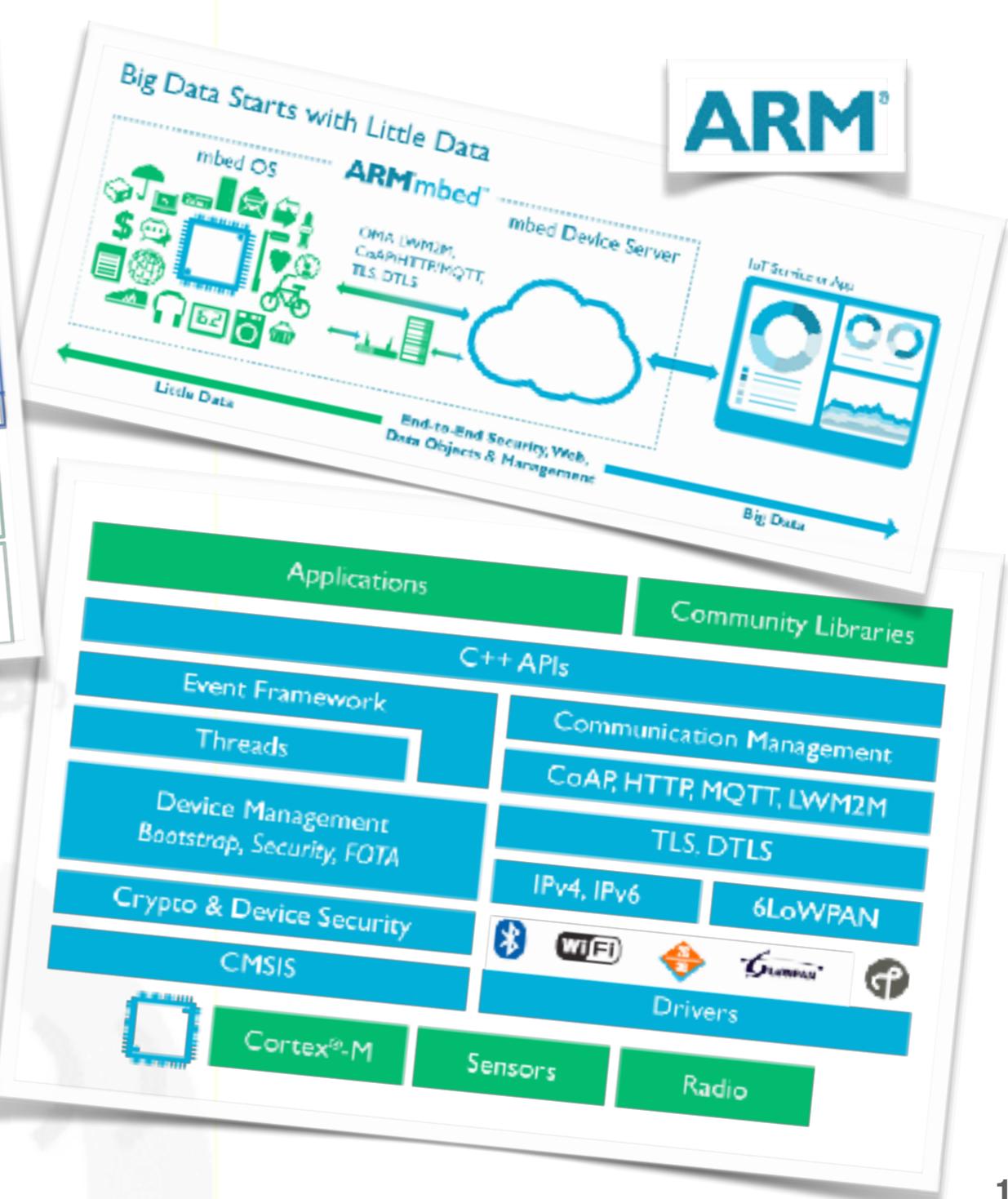
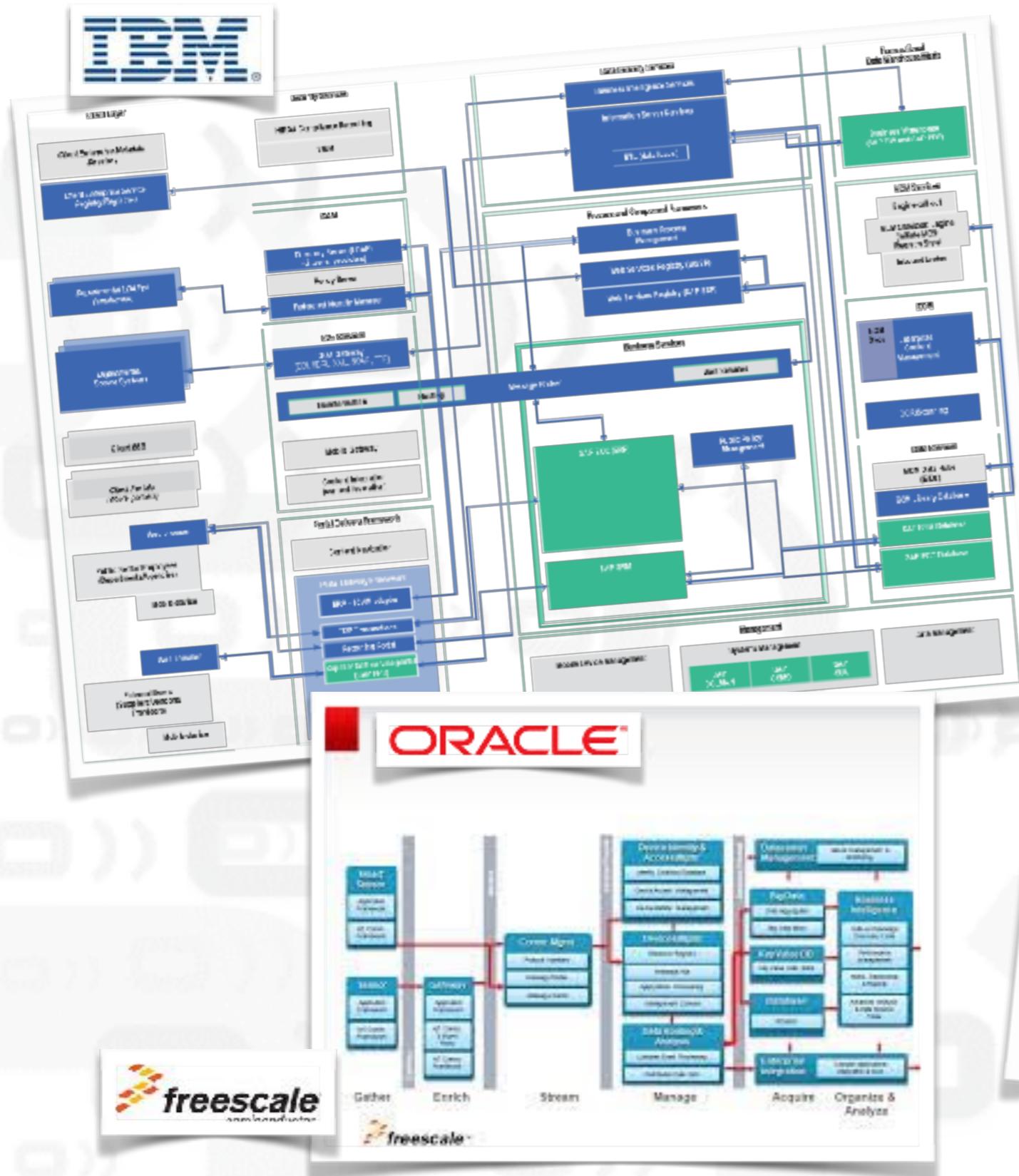
Leveraging V2COM's Conera & Intelligenceware Suite



# Multiple architectures & Platforms



Regardless of the network and the IT infrastructure



# IntelligenceWare Suite

Bird's-eye view

**Decision**

BI

CEP

**Vision**

Device Data

Business Processes

**WITS**

Protocol management  
and translation

Scheduling and load  
balancing

System  
Integration  
(ESB)

**Axon**

Network Management

Device Accessibility

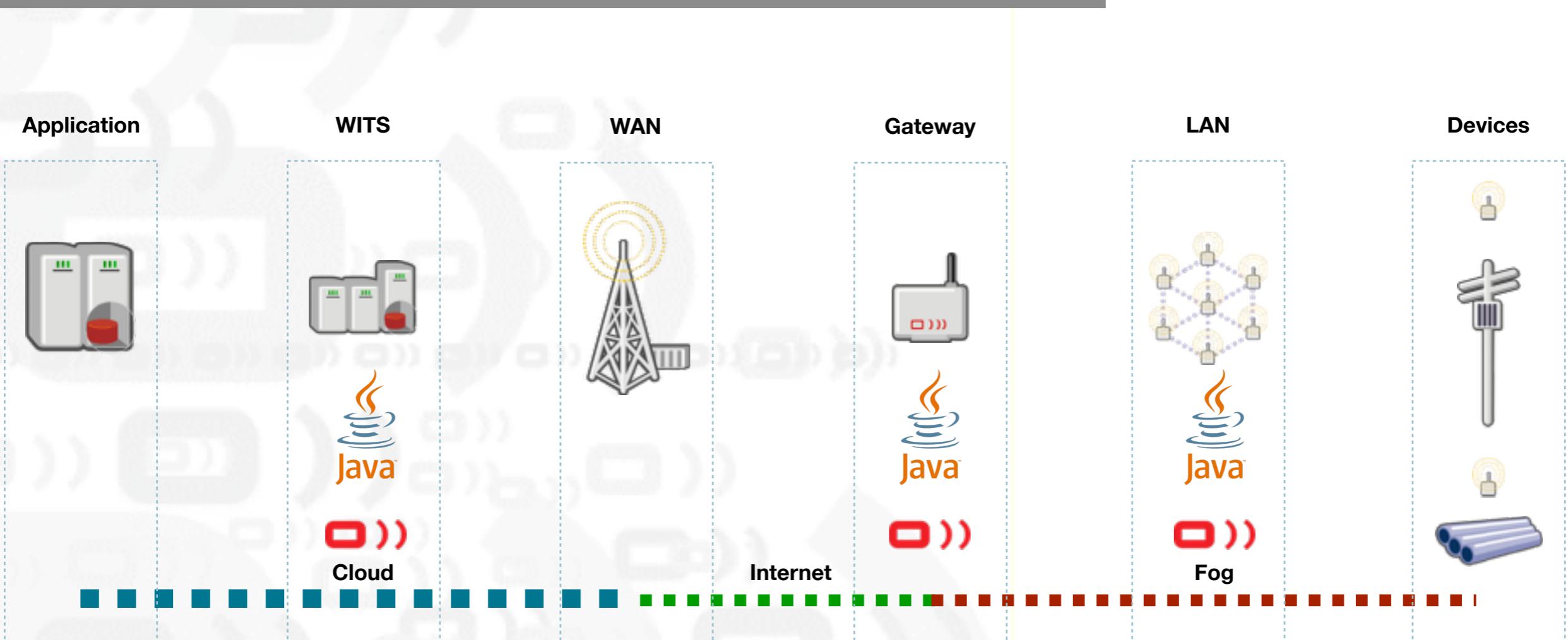
# Data in Action



Fast Data and Actionable Business Intelligence

Rapidly scale and connect new and legacy devices

Data is analyzed everywhere: fog and cloud





# IoT in Action

Enabling Smart Cities

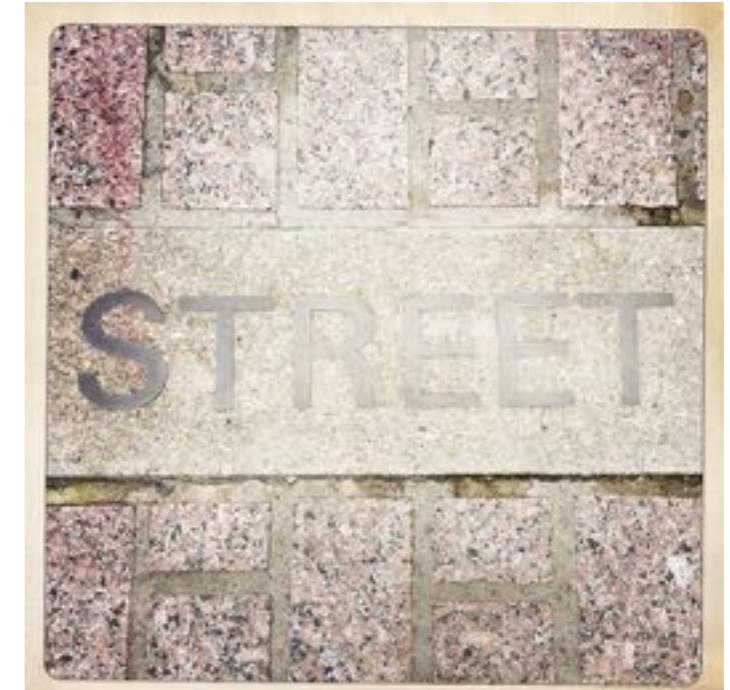
## Traffic



## Sewage



## Parking



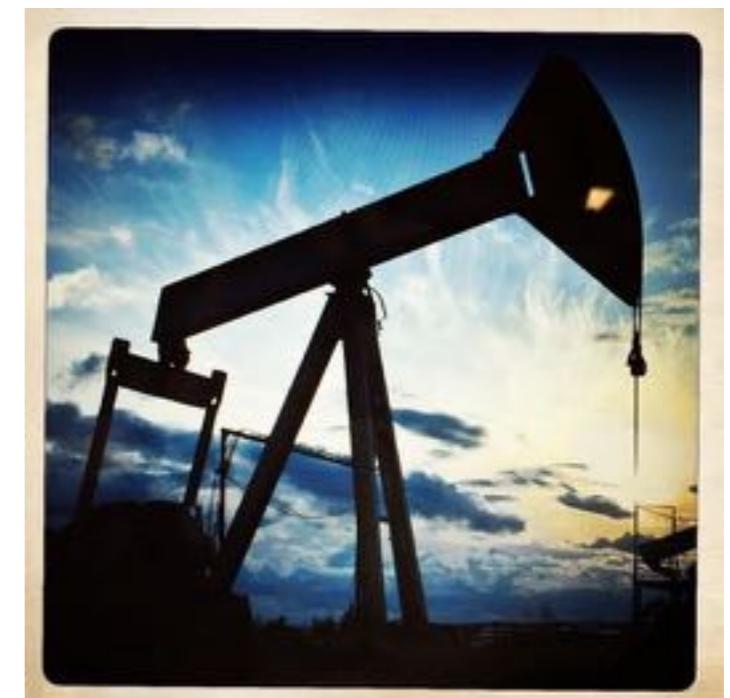
## Water



## Electricity



## Oil & Gas





**Java at V2COM**



# Why Java?

What we like about Java

**Same language from device to datacenter**

**Same language in many environments**

**Same product in many platforms**

**Healthy open-source ecosystem**



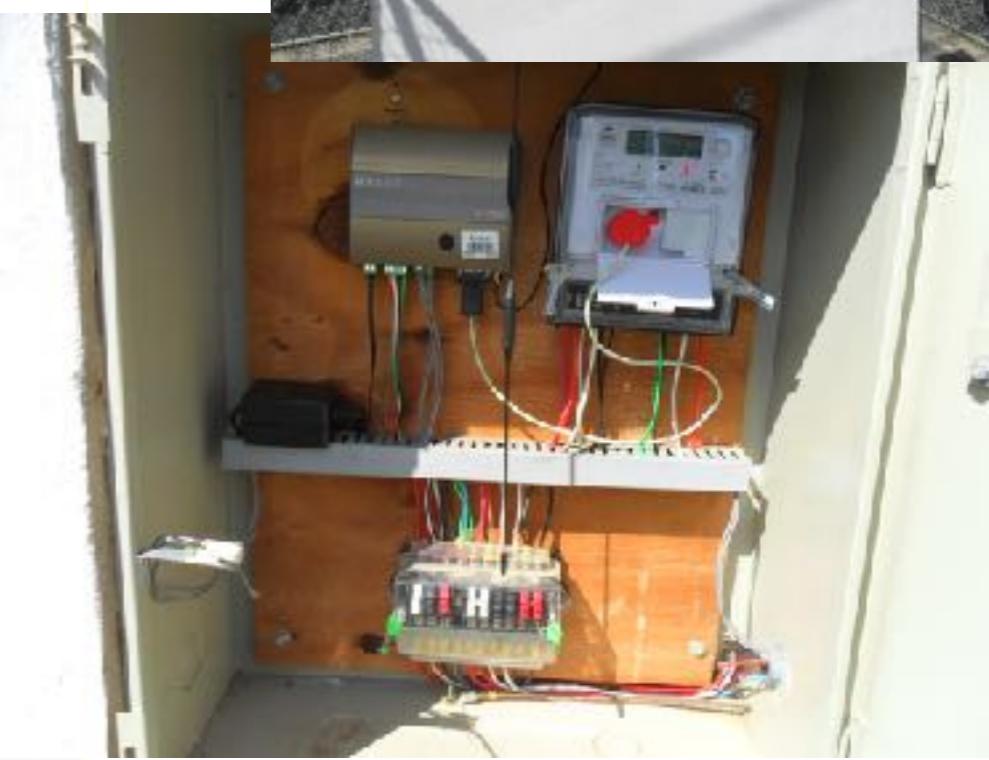


# Where Java?

Where we use Java

On the field - Gateways and Mesh Nodes

On the Datacenter - whole software stack





# Java technologies we use

Where we use Java

Java ME - since CLDC 1...

Migrating to newer versions





# Java technologies we use

Where we use Java

Java SE 5 and 6



Netty



Apache



eclipse



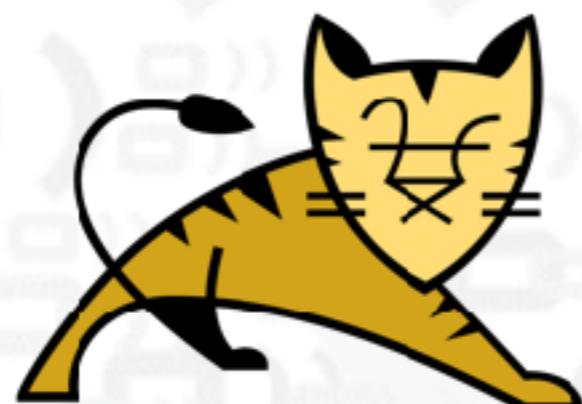
# Java technologies we use

Where we use Java

Java EE 5 and 6 - EJBs, JPA, JSP, JSF, JMS

ORACLE  
WebLogic

JBoss®  
by Red Hat



IBM.  
WebSphere.



A photograph of a tall, lattice-structured power transmission tower silhouetted against a sky filled with dramatic, dark clouds. In the foreground, there are two streetlights; one is a standard four-lamp model on the right, and another is a smaller two-lamp model on a post further left. Power lines run across the frame. The overall atmosphere is industrial and atmospheric.

An IIoT example:

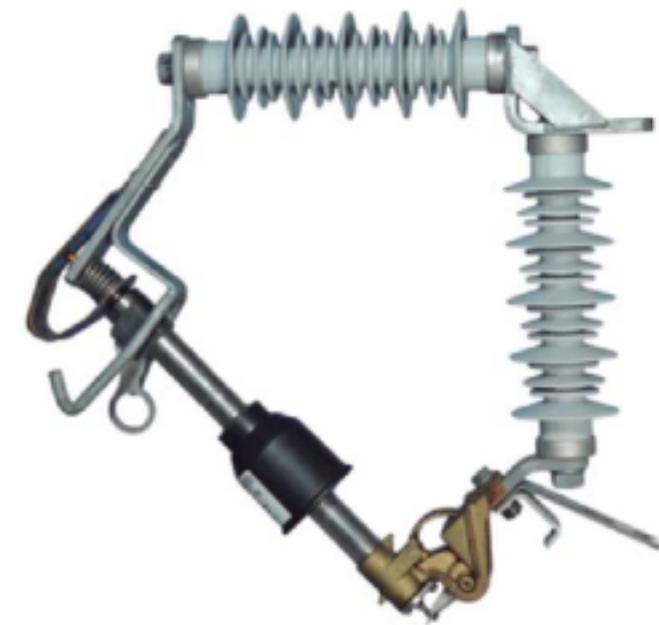
# Smart Fault Isolators



# What are Smart Fault Isolators?

## A definition

- ▶ The SFI is a self-contained, circuit-opening device used in conjunction with source-side protective devices, such as reclosers or circuit breakers, to automatically isolate faulted sections of electrical distribution systems. Power to operate the control circuitry and the mechanism is obtained from the line through the sensing-current transformers. No auxiliary power supply, external connections, or external equipment is required.
- ▶ The SFI senses current flow above a preset level, and when the source-side protective device opens to de-energize the circuit, the SFI counts the over-current interruption. SFIs are an economical method of further improving service on distribution lines equipped with reclosers or reclosing circuit breakers. They isolate permanent faults and confine outages to smaller sections of line. Since the SFI does not require a time-current base for its operation, it is easily coordinated with other protective devices on the system. It provides an additional step of protection without adding a coordinating step to the protective scheme. SFIs can be used in place of fuses or between the reclosing device and a fuse without setting changes to other devices.



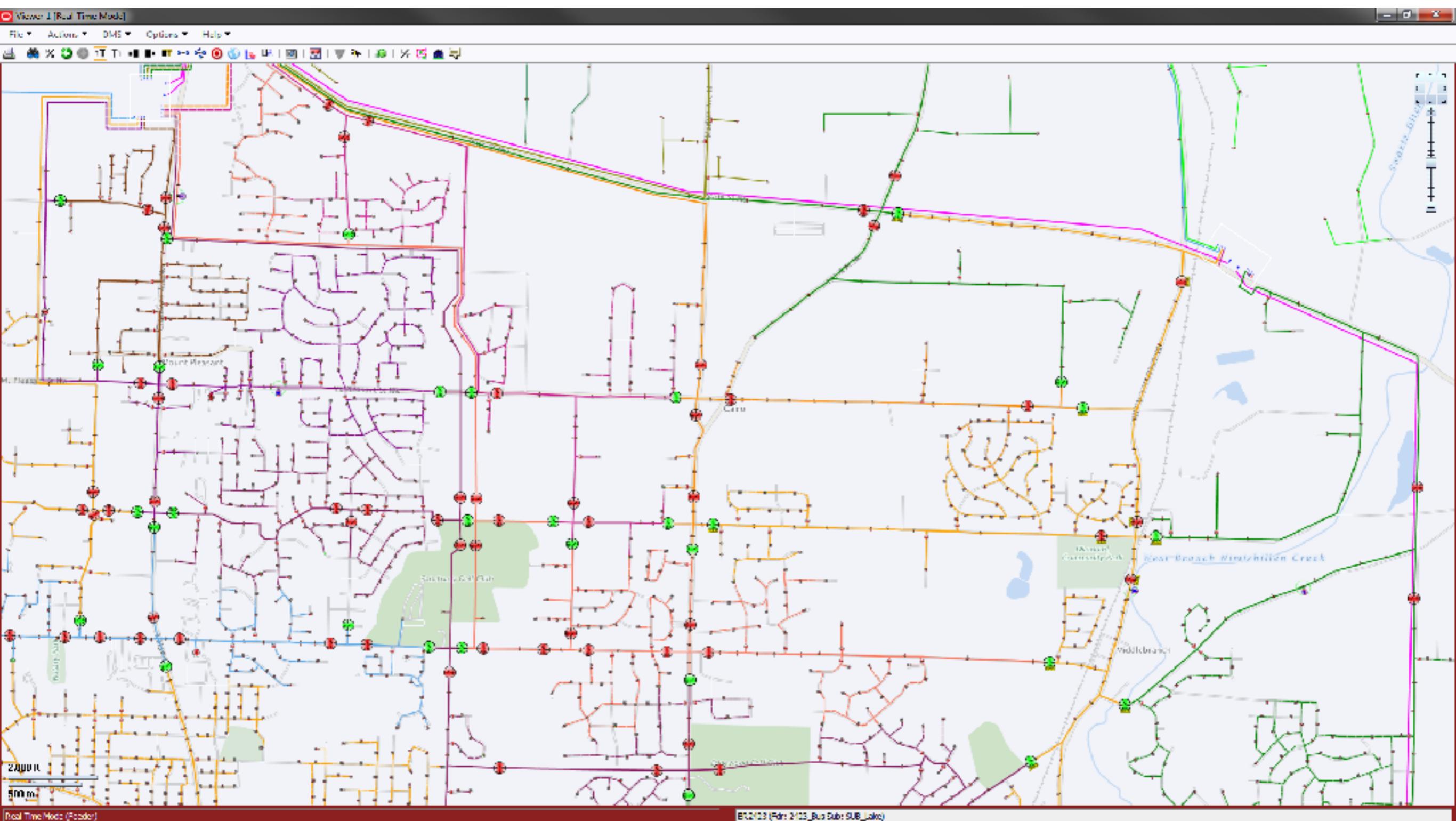
# SFIs in Action



# Everything is normal



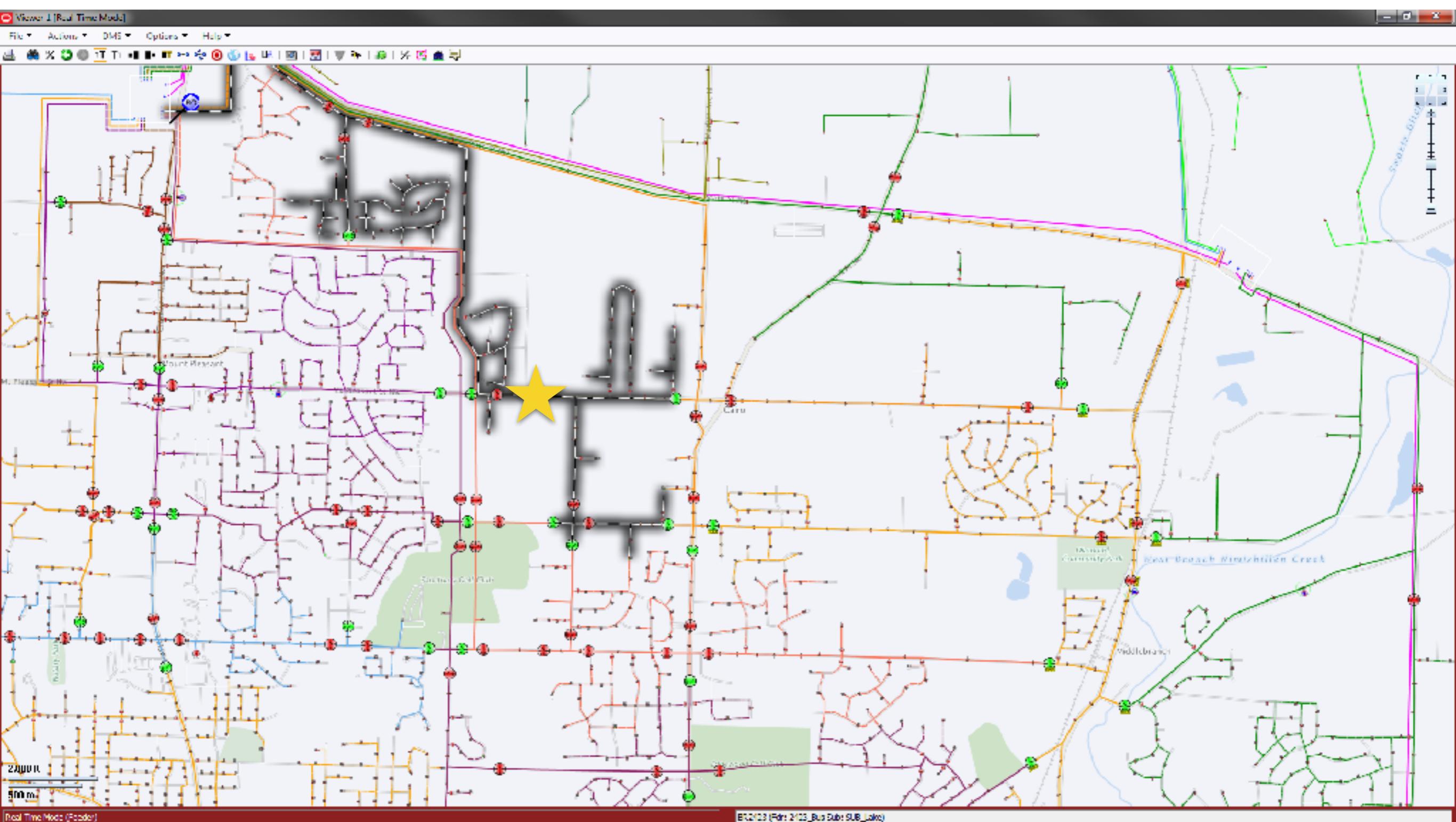
Until...





# A fault happens

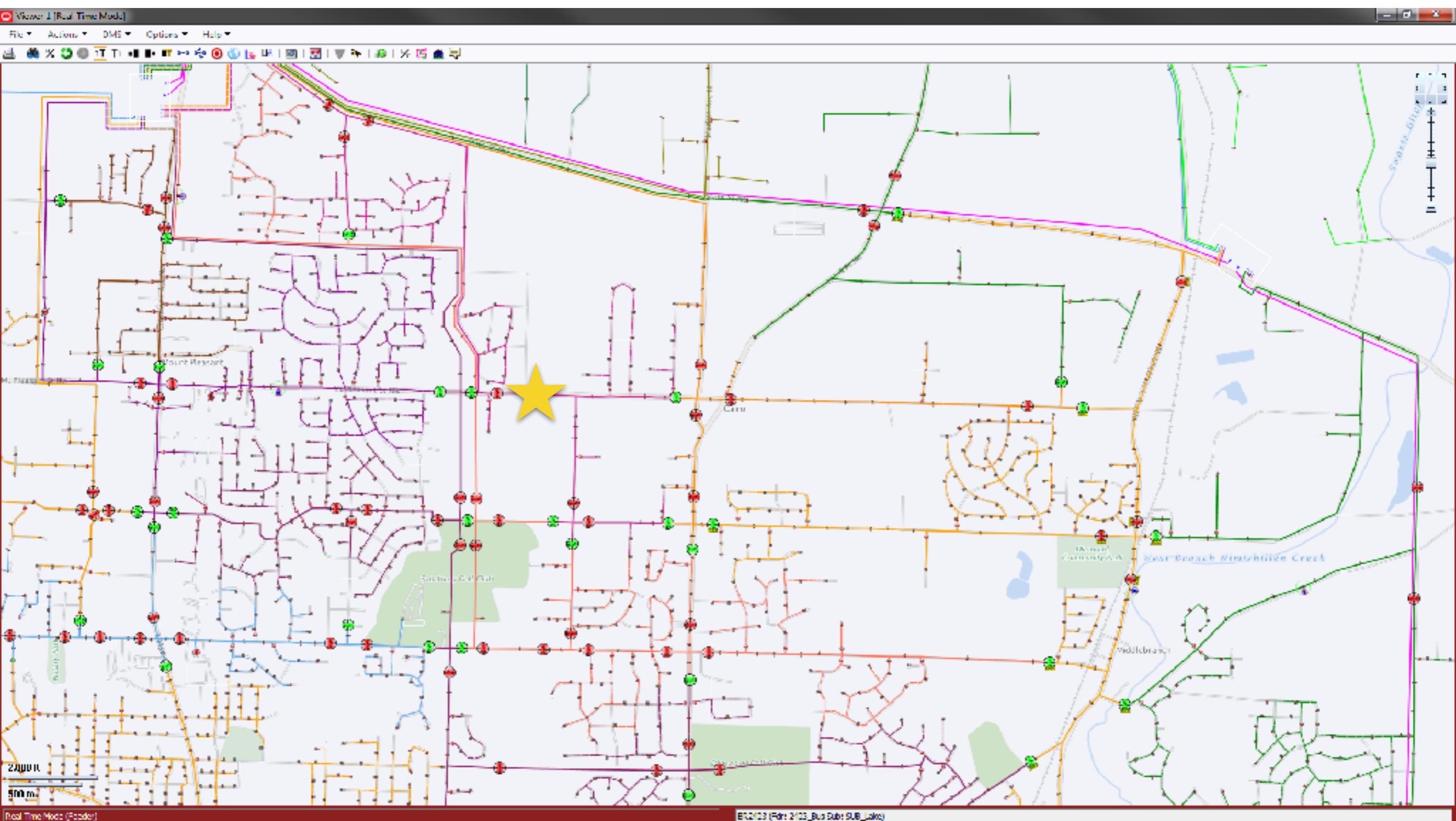
Substation recloser opens



# Recloser tries to close again



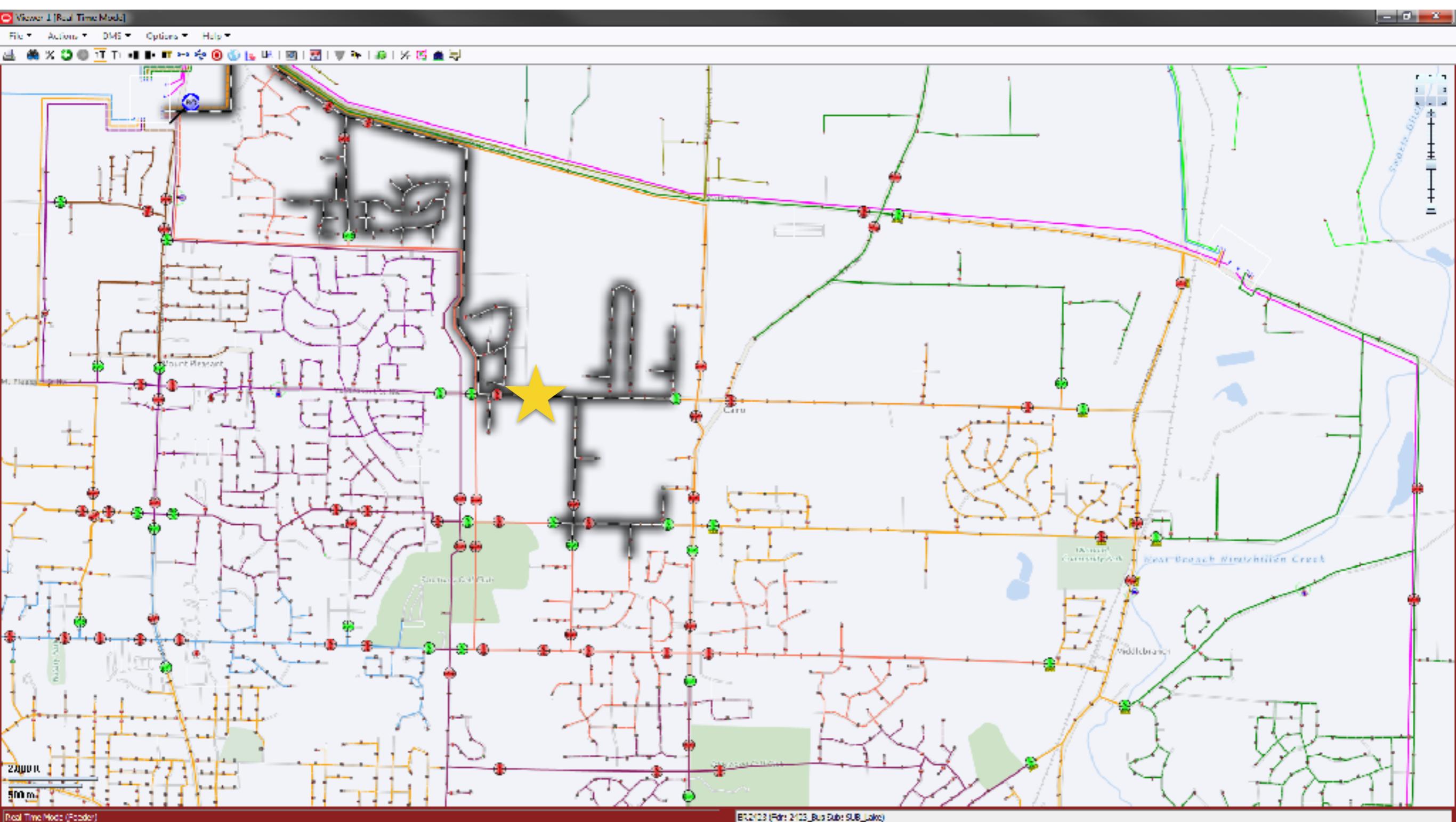
But the fault is still there, so...





# Recloser opens again

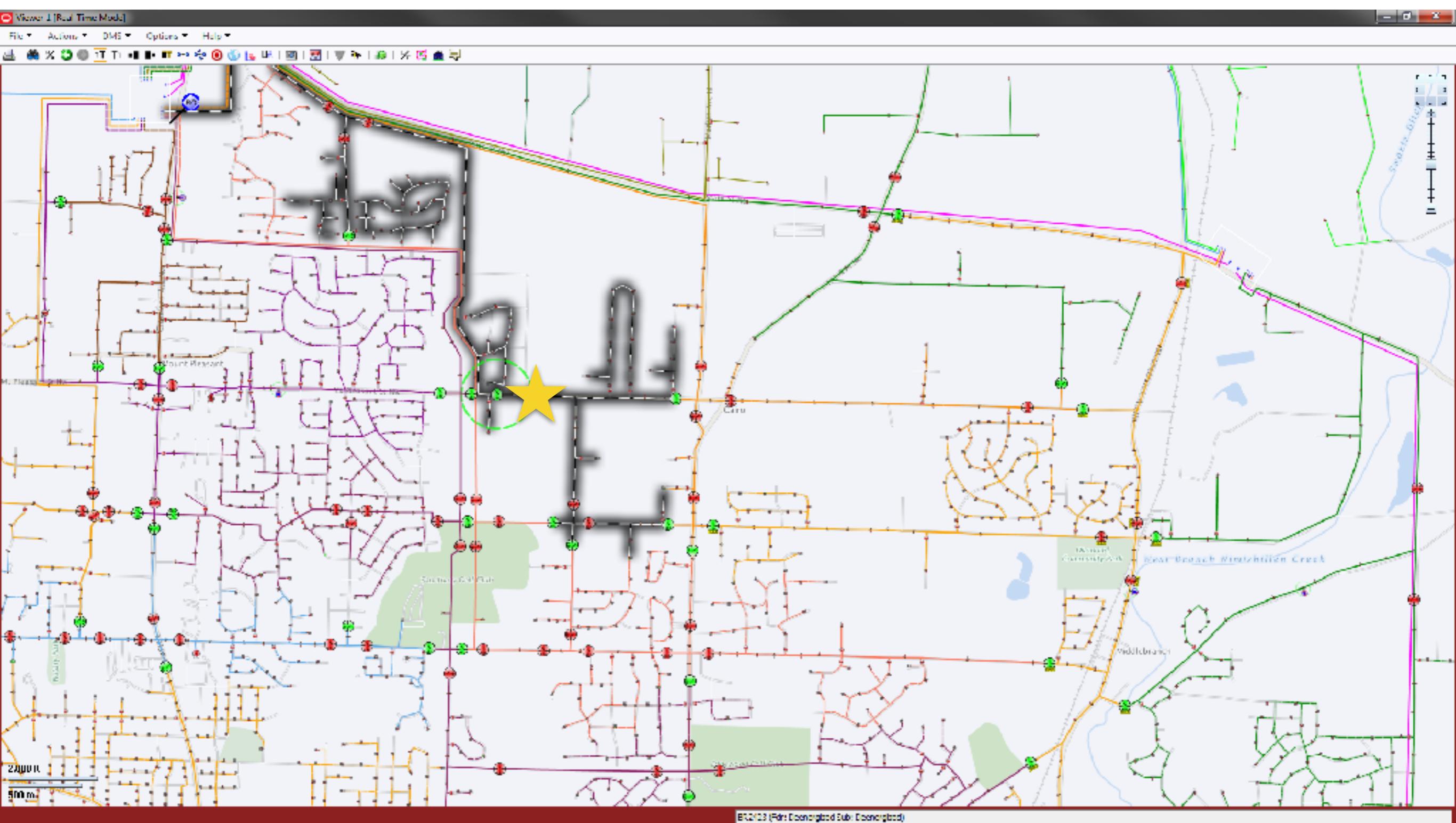
Now the SFI realizes there's a fault!



# Recloser opens again



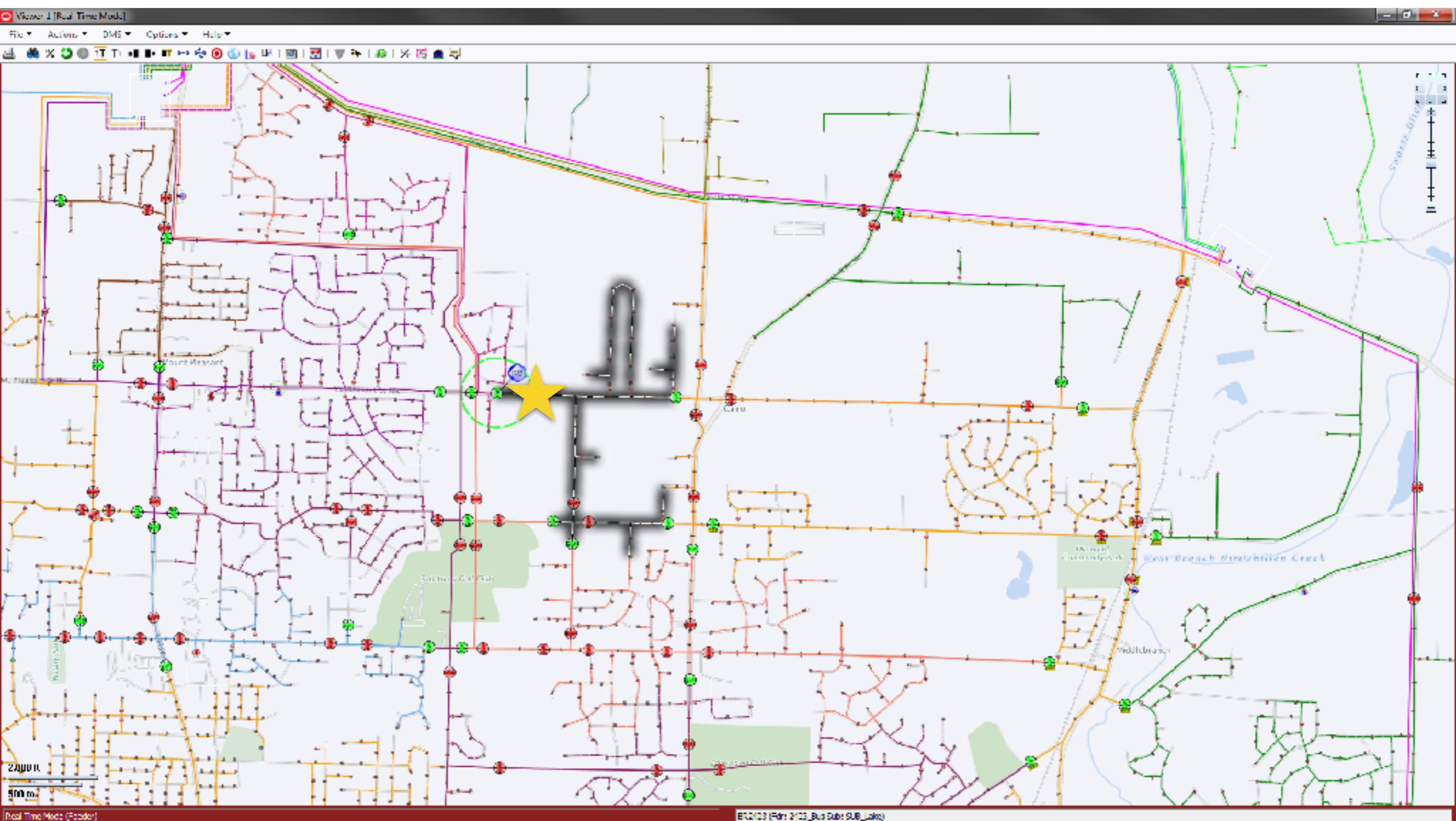
Now the SFI realizes there's a fault!



# Recloser closes again



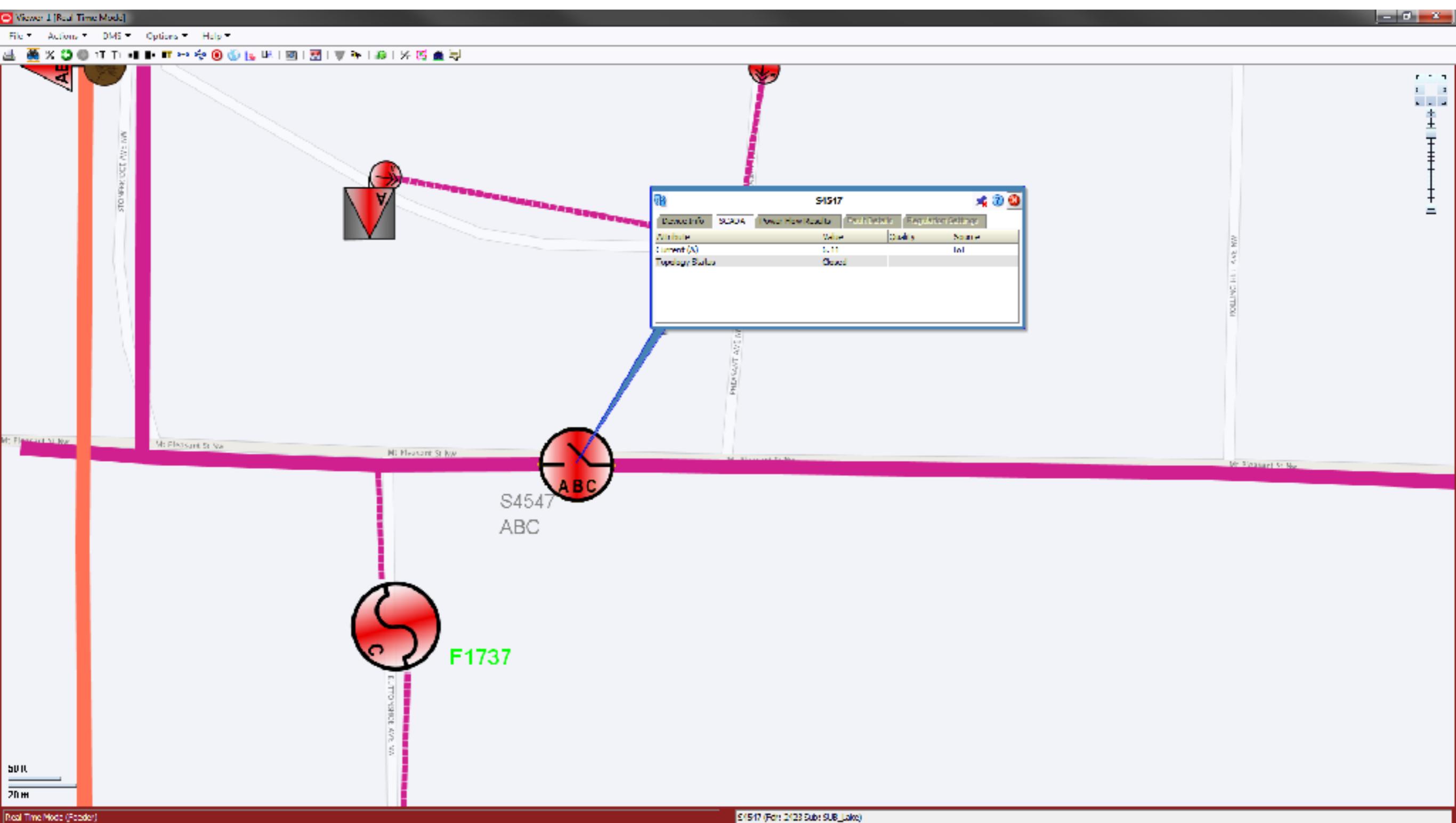
And the fault is isolated



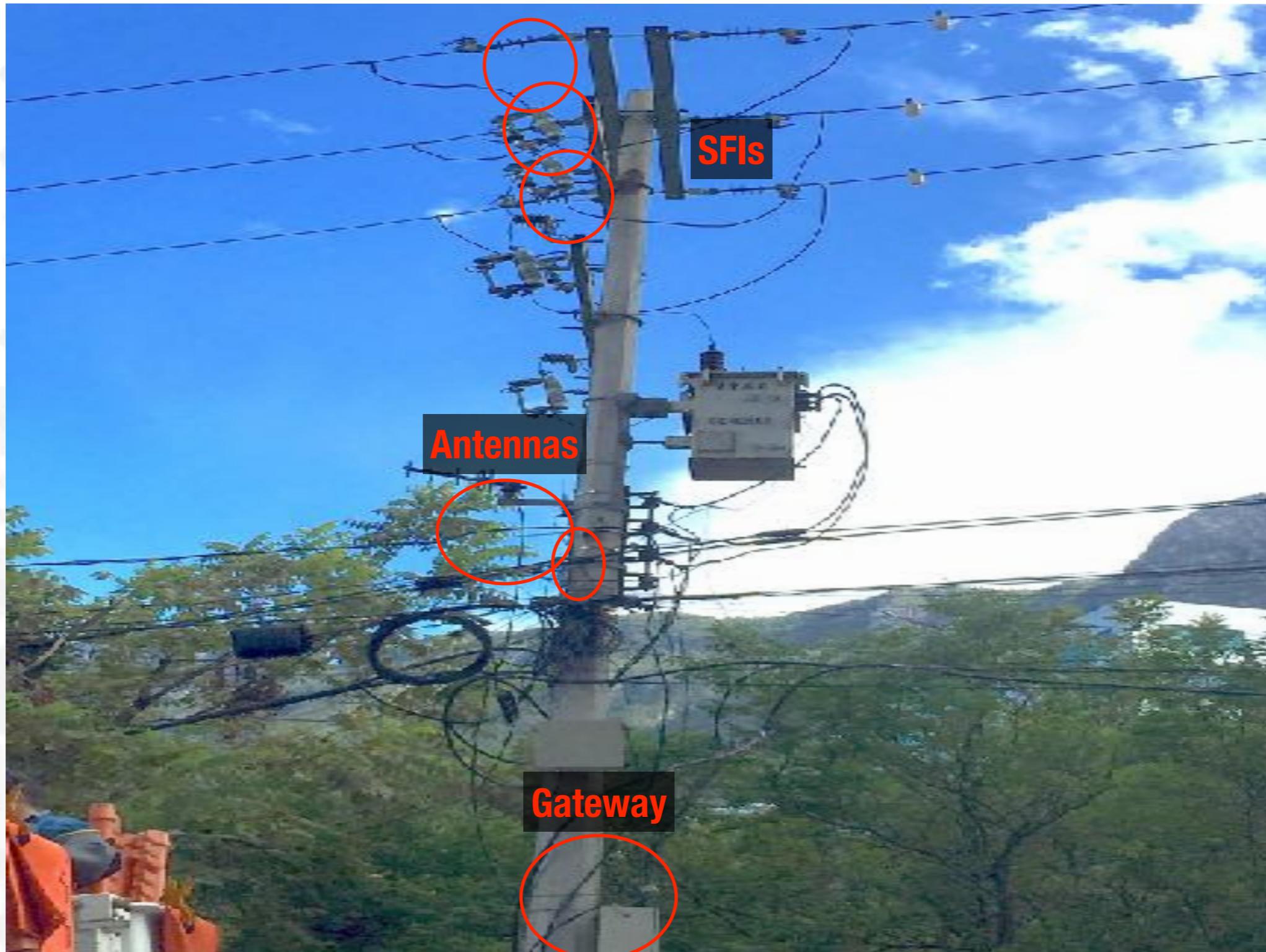


# The SFI also measures!

Voltage



# Deployed devices





# Communication gateway

Customized solution for WAN and power supply needs

