



# SCATS® Troubleshooting

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*Trusted Transportation Solutions*

# Troubleshooting Scenarios

## ■ Detector issues

- Not detecting – Set recall if SCATS has yet set automatic recall
- Failed detector – Phase maxing out every cycle – Adjust time settings if necessary

## ■ Communication failure

- Intersection level
- Server level

## ■ Timing complaint – initial review

- Phase or approach not being served
- Not getting enough time

## ■ Preventive maintenance

- Review of alarms history

# SCATS Detectors – Alarm Categories

- SCATS will alarm detectors (failed or not actuating) at the end of the detector alarm interval
- Typical alarm category for active detectors is # 2
- Alarm category 2 checks for at least one actuation every hour on weekdays from 7:00 AM – 7:00 PM.
- On weekends category 2 detectors need to have at least one actuation every two hours from 10:00 AM – 6:00 PM
- Above settings are coded for all existing SCATS intersections.
- Alarm category settings are configured in the SCATS personality.

# Detector Issues – Not Detecting

- SCATS will alarm the detector due to no activity during alarm period and set a MAX recall



# Detector Issues – Locked Detectors

- SCATS will alarm constantly ON detector during alarm period and set a MAX recall

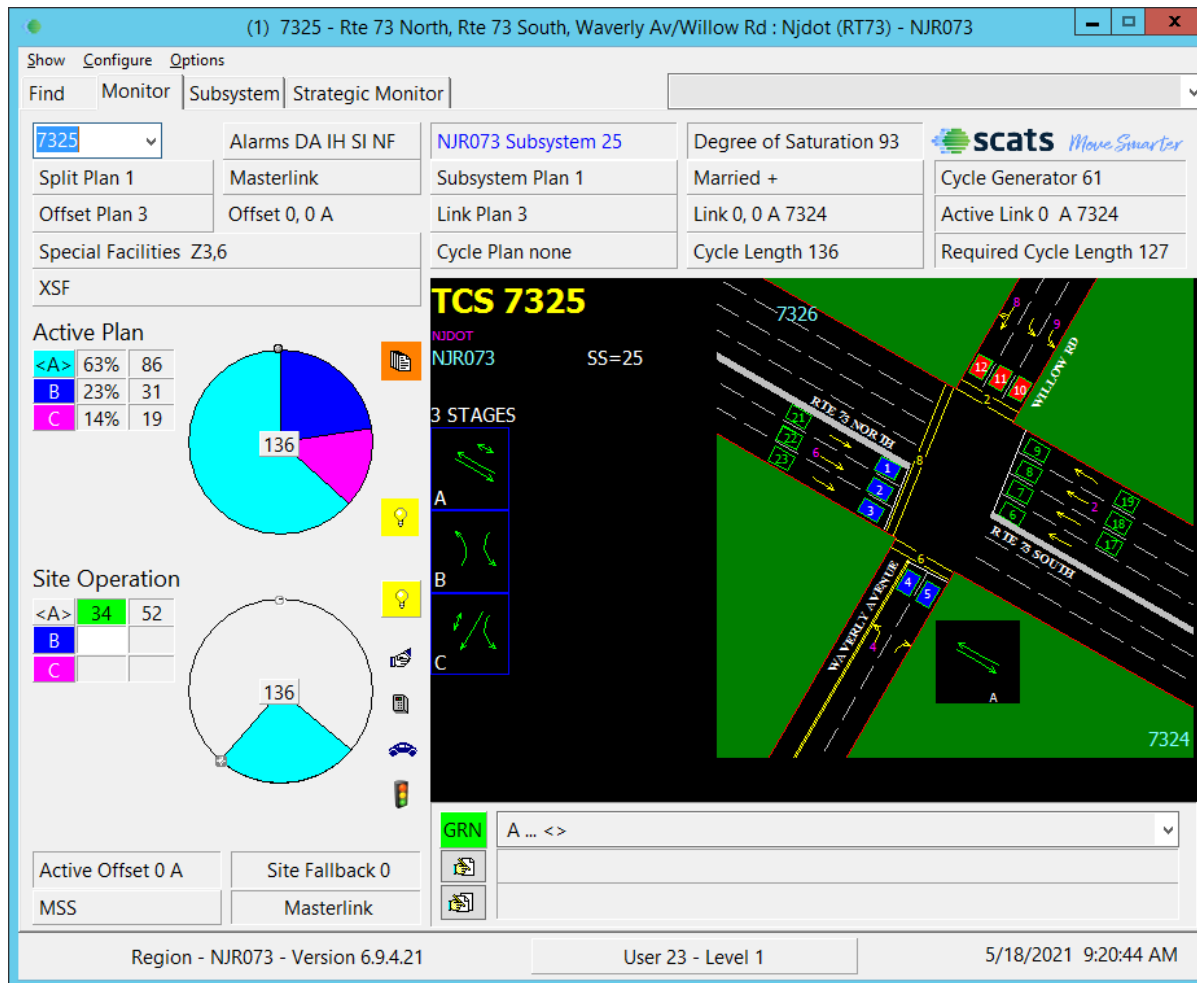


# Detector Issues – Not Detecting

- User can set MIN recall on the stage by setting Permanent Demand (PD) in the appropriate Split Plan
- User can set MAX recall on the stage by setting Permanent Demand (PD) + No Gap (NG)

# Detector Issues – locked Detectors

- User may choose to adjust the Split for the Stage, which has the phase with failed detector.

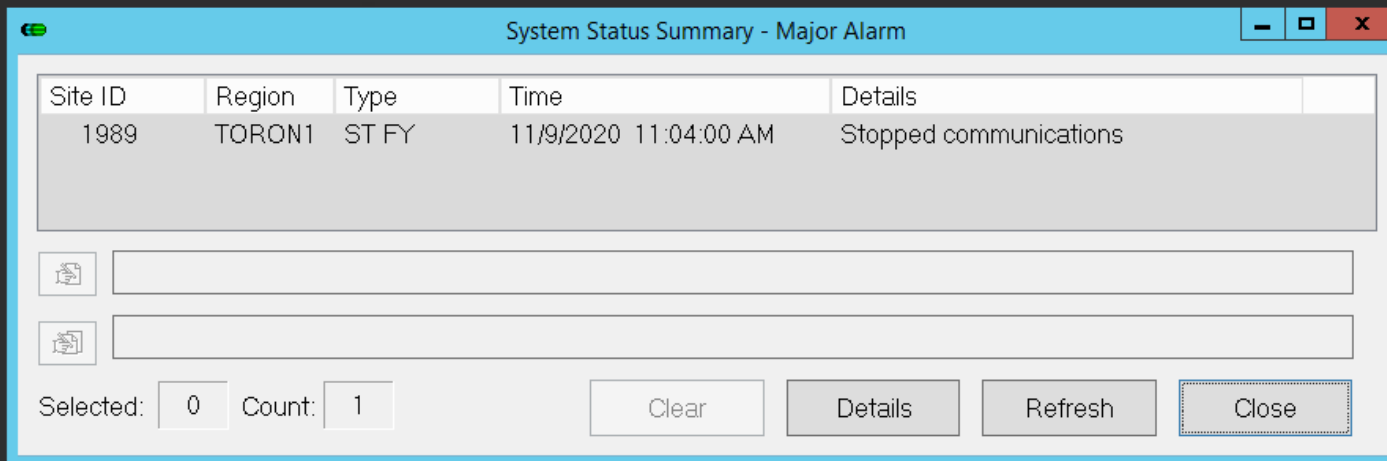
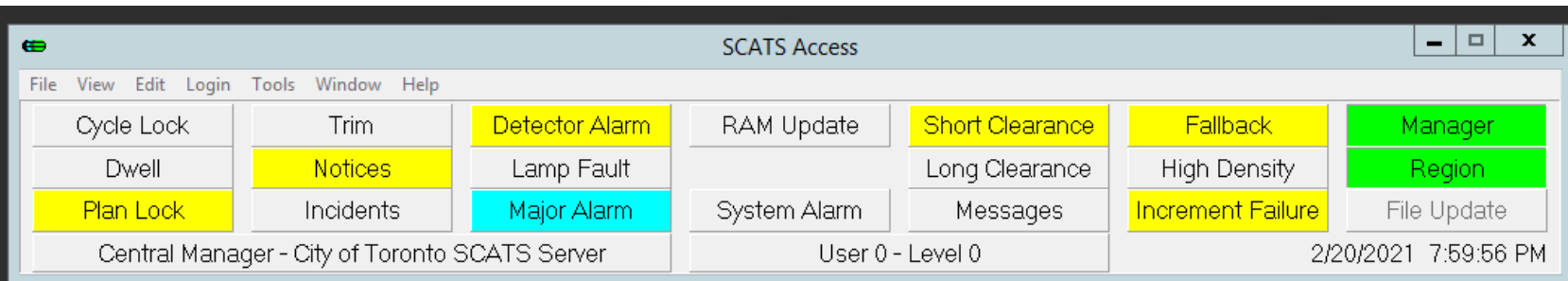
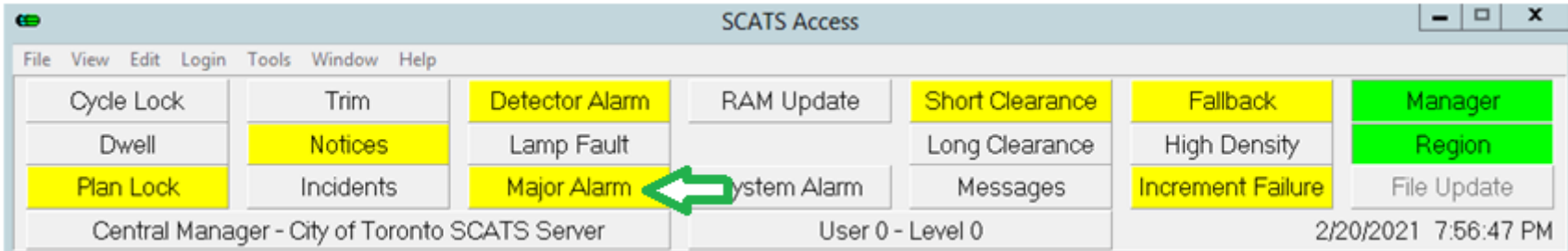


# Communication Issues

- If communication breaks at an intersection, it will not communicate with SCATS server and ST (Stopped Talking) alarm is recorded
- Without communication, user cannot see the intersection operation via SCATS Access
- ST alarm will go away on its own when intersection communication is restored
- SCATS will also resume Masterlink (Adaptive) operation on restoration of communication



# Communication Failure – Major Aalarm



# Communication Failure – Intersection Level

(1) 1989 - Sheppard Ave E, Dean Park Drive, Rouge River Drive : Scarborough - TORON1

Show Configure Options

Find Monitor Subsystem Strategic Monitor

1989

Alarms ST FY NF

Split Plan 1

Offset Plan 3

Special Facilities Z6

XSF 2.6

Active Plan

60% 52

40% 34

86

Site Operation

Comms stopped

Flashing

TCS 1989

SCARBOROUGH

TORON1

SS=8

2 STAGES

A

B

2282

SHEPPARD AVE E

DEAN PARK DR

ROUGE RIVER DR

TORON1 Subsystem 8

Degree of Saturation 0

SCATS 6

Subsystem Plan 1

Divorced -

Cycle Generator 37

Link Plan 3

Link 31, 31 ^A 2282

Active Link 31 ^A 2282

Cycle Plan none

Cycle Length 86

Required Cycle Length 85

1989 - Alarms

Code	Description
ST	Stopped communications
FY	Signals flashing yellow
NF	New fault log entry

☐ Park alarms

Clear Details... Reset... Close

Active Offset 0 ^A

Site Fallback 120

MSS

Region - TORON1 - Version 6.9.3.21

User 0 - Level 0

2/20/2021 8:02:50 PM

# Communication Failure – Intersection Level

- Most of the times, ST alarm means the communication issue is in the field
- User can remotely try to ping the controller and modem
- Check site data and ensure that intersection is set on 'Network'
- Check Breakout Manager on SCATS server and ensure that the intersection is properly configured (applicable to new intersection only)

# Communication Failure – Server Level

- Best indication of communication failure at server level
  - Most likely entire system (all intersections in one region) is down
  - ST (Stopped Talking) alarm is accompanied by DZ alarm
- DZ alarm means output interface failure i.e., Breakout Manager failure
- Check to see if BreakoutManager.exe is running in Task Manager
- System Administrator can restart the Breakout Manager batch service

# Signal Timing Complaints – Initial Review

## ■ Phase or Approach is not getting green

- Side street not coming ON
- Callable left turn phase not coming up

## ■ Long wait time

- Main street delay
- Side street delay

# Phase Not Coming Up

- Most of the times this kind of complaint is a result of detection issue
- Once a locked demand is registered from a detector, SCATS will never skip a stage unless Preemption / Hurry call becomes active
- At the end of the alarm interval, SCATS will alarm a detector, which is not actuating. Complaint may come in the meantime before it is alarmed
- User can set recalls as discussed in Detector Issues section

# Complaint About Long Wait Time

## ■ Main Street Delay

- Most of the times this kind of complaint is a result of detection issue, such as locked detector is holding phase longer than needed.
- Adjust side street split to minimize the delay

## ■ Side Street Delay

- Intersection is in coordination and running higher cycle length than the required cycle time – Discuss with TSO
- Delay in the night - SCATS Master Isolated operation review
- Main street detector is failed and causing delay during Master Isolated operation

# SCATS Log

- All System events are logged to a binary file, which could be reviewed via SCATS Log
- Alarms can be filtered to desired types such as FY, WD, ST, DZ, DA etc.
- Sometimes alarms gets reported at the same time but as the intersection is in ST, they are not updated. For example, Int 1989 (slide 10) shows ST and FY, but that does not mean the intersection is still in flash. When it lost communication, it should have gone in FY just before ST. That is why FY alarm is logged. For SCATS to log any alarms to the system, intersection needs to have communication. This may have happened due to power failure.
- If a concerning alarm is found, it needs to be reported to responsible group for further review





# Questions / Discussion

End