

NavView User Guide – 24 Alarms

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24. ALARMS

The Alarm feature enables a user to create alarms using C programming operators to generate a conditional test equation of data source observations. This is a very flexible tool that can be used to create complex test conditions.

Alarms configured and triggered on one instance of NavView are published to other NavView clients, licensed and unlicensed, connected to the same Network Services.

If Roles and Privileges are enabled, the user must be logged in as Online, Supervisor or Administrator to manage the Alerts.

24.1 MANAGING ALARMS

Alarms are managed from the Alarm Service Configuration window, see Figure 24-2. This is accessed from the Setup ribbon by clicking on Alarms in the Configure section, see Figure 24-1Figure 24-2 Alarm Service Configuration Window.

Home	View Setup							
Manage	Kan Horizontal CRS	t: Calculations	S Exclusion Zones	Alarms	🕔 Time Sync 🖬	Vehicles	T iles 3D	A ISON
Remote	🧦 Vertical CRS	🕹 Guidance Calculations	Backgrounds		Configuration	Connections	T Color Maps	
Workspace1 •	🦉 Configuration	🖸 Watch Regions	I GIS		Conliguration	File DTMs	Metwork Services	
Workspaces	Project			Со	nfigure			

FIGURE 24-1 SETUP RIBBON - ALARMS

24.2 ADDING ALARMS

An Alarm is added from the Alarm Service Configuration window, see Figure 24-2.

The configuration window features an **Alarms** tab with add and remove buttons, see Figure 24-2 and a **Styles** tab used to control the default styles for alarms, see Figure 24-3.

Alarm Service Configuration					-	
Show Console Alarms Styles						
Alarms Styles						+ -
Name	Ack	Time Triggered	Time Since Triggered	Alarm Level	Message	
				ОК	Cancel	Apply

FIGURE 24-2 ALARM SERVICE CONFIGURATION WINDOW – ALARMS TAB



Alarm	Service Co	onfigurati	on			\times
Show 0	Console					
Alarms	Styles					
Ok	Warning	Error				
⊿ Ala	ırm Result					
Ba	ackground		Red			
Fla	ashing		 Image: A start of the start of			
Fc	ont Size		14			
Fc	preground		White			
				ОК		

FIGURE 24-3 ALARM SERVICE CONFIGURATION WINDOW - STYLES TAB

- **Show Console:** When this is enabled, the Alarm Console window will open automatically when an alarm is triggered
- Background: Color to display with event in the Text window, Alarm Status window
 and Alarm Console window
- Flashing: Enable Alarm message in a text window to flash when triggered
- Font Size: Message text size displayed in the Alarm Status window and Alarm Console window
- **Foreground:** Message text color displayed in the Alarm Status window, Alarm Console window and Text window
- 1. To add an alarm, in the Alarms tab click the add button. This will add an alarm to the list to be configured, see Figure 24-4, Alarm 1 by default.

Q Alarm	n Servi	ce Configuration					- 🗆	×
Show (
Alarms	Sty	rles						
								+
		Name	Ack	Time Triggered	Time Since Triggered	Alarm Level	Message	
•		Alarm 1				Ok		
						ОК	Cancel	Apply

FIGURE 24-4 ALARM ADDED

24.3 CONFIGURING ALARMS

An Alarm requires a Data Source and a Condition to trigger the Alarm.

24.3.1 DATA SOURCES

1. Double click on the alarm to open the Alarms Configuration window, see Figure 24-5.



Alarms Configure	ration								_		×
 Misc 											
Name	Alarm										
– Data Sources –––––										*	00
Data Source	Proper	ty	Units	Variable Nar	ne						
Conditions									1	₽	⊕ ⊂
Condition	Alarm Level	Messag	je			Sound					
							O	K			

FIGURE 24-5 ALARMS CONFIGURATION WINDOW

2. Assign a **Name** for the alarm.

Alarms Configuration	on						-		\times
[⊿] Misc									
Name	GPS- Differentia	l Age							
– Data Sources –								~ C	
Data Source	Property	Units	Variable Name						
Conditions							٠	+ •	
Condition	Alarm Level Messag	ge			Sound				
						ОК	Cancel	A	Apply

FIGURE 24-6 ALARM NAME

- 3. **Data sources** are added from the dropdown button, and any data from within the NavView system can be added, see Figure 24-7
- 4. When a data source is added, it appears in the table view, and a Variable Name is assigned to it. The default is for variables to be named as A, B, C, D, but this can be modified if desired, see Figure 24-8

Note: Multiple data sources may be added and each one must have a unique variable name.



s Configurati	ion			– 🗆 X
2				
ame	GPS- Differential Age			
ources —				
				Devices/GPS/GGA/Diff Age 💽 🕀 🖨
Source	Property Units	Variable Name		None
ions —				► Beacons
				Acoustics
	Alarm Level Message		Sound	Connections
	<u>-</u>			Calculations Guidance
				 Guidance Simulation
				 Simulation Devices
				GPS 1
				Gyro 1
				GPS 2
				Gyro 2
				USBL Output B23
				► USBL
				Configurable Output
				▼ GPS
				▼ GGA
				Geo2D (WGS 84-4326)
				Geo2D (WGS 84-4326) (Inpu
				Elevation Working (MSL heig
				Number of Satellites
				HDOP
				Diff Age
				DGPS Ref Station Fix Quality
				Fix Quality Geoid Separation

FIGURE 24-7 ALARMS – DATA SOURCES

Alarms Configuration						-		×
4 Misc								
Name	GPS - Differential	Age						
– Data Sources –						Г		
Data Source	Property	Units	Variable Name			L	Ľ	
Data Source Devices/GPS/GGA/Diff A		Seconds	A					
Conditions —								
						1	ŧ	⊕
	larm Level Messag	2		Sound				
[A]>2	Varning 👻 Differen	tial Loss		None				-
					ОК		1	

FIGURE 24-8 ALARMS - DATA SOURCE ADDED

 Property: Depending on what data source was selected, the available properties can be found by clicking in the property box, see Figure 24-9



Alarms Configuration					- 🗆 X
4 Misc					
Name	GPS - Differential A	lge			
-Data Sources					· • • •
Data Source Devices/GPS/GGA/Diff Age	Property	Units	Variable Name		
	Value 🛛 🗸	Seconds	A		
- Conditions	SystemTime UtcTime Age				± = 0
Condition Alarr [A]>30 Warr	n Level Message	2		Sound	
[A]>30 War	ning 👻 Differen	tial Loss		Asterisk	*
					OK Cancel Apply

FIGURE 24-9 ALARMS - DATA SOURCE PROPERTY

• **Units:** From the drop-down, select the units associated with the selected data source property, see Figure 24-10

The selected unit will determine the number value that is extracted from the data source, and associated with the variable, in the conditions setup.

Data Source Property Units Variable Name Devices/GPS/GGA/Diff Age Value Seconds A Conditions Days Hours Minutes Seconds Condition Alarm Level Message Millseconds Sound	Alarms Configuration	ion	Sha	ared Data	NDatabase						-		×
Data Sources Data Source Property Units Variable Name Devices/GPS/GGA/Diff Age Value Days Hours Hours Hours Hours Hours Hours Kinutes Seconds Condition Alarm Level Message Milliseconds Sound	✓ Misc												
Data Source Property Units Variable Name Devices/GPS/GGA/Diff Age Value Seconds A Conditions Hours Minutes Seconds Condition Condition Alarm Level Message Milliseconds Sound	Name		GPS - Diffe	rential Ag	је								
Devices/GPS/GGA/Diff Age Value Seconds A Days Conditions Hours Minutes Seconds Condition Alarm Level Message Milliseconds Seconds Sound	- Data Sources											•	•
Conditions Days Hours Minutes Seconds Condition Alarm Level Message Milliseconds Sound	Data Source		Property		Units	Variable Name							
Conditions Hours Minutes Seconds Condition Alarm Level Message Milliseconds Sound	Devices/GPS/GGA/D	Diff Age	Value			А							
Condition Alarm Level Message Milliseconds Sound	Conditions				Hours Minutes						1	•	•
[A]>30 Warning * Differential Loss Asterisk *	Condition	Alarn		Message	Milliseconds			Sound					
	[A]>30	Warr	ning 👻 🛛	Differenti	Microseconds al Loss			Asterisk					•
OK Cancel Apply										ОК			

FIGURE 24-10 ALARMS - DATA SOURCE UNITS

Multiple data sources may be added and each one must have a unique variable name.

24.3.2 CONDITIONS

Conditions are setup as mathematical expressions which evaluate to true or false. If a condition is true the alarm will be triggered.

The following link has details on the available operators and their order of precedence.

<u>Operators and expressions - List all operators and expression - C# reference | Microsoft Learn</u>

Variables are entered into conditions using square brackets. Typing an open square bracket [in the condition text box will bring up a drop down of the available variable names, which have been set up in Data Sources.

1. To add a **Condition**, click the add button . This will open the Condition Result Dialog, see Figure 24-11



Condition Result			\times
Condition:		*	
Alarm Result			
Alarm Level		-	
Alarm Sound	None	-	
Message			
Custom Sound File:		. 🗭	
0	K Cai	ncel	

FIGURE 24-11 ALARMS - CONDITION RESULT DIALOG

- 2. Enter expression in the Condition box.
- 3. Setup Alarm Result notification.
 - Alarm Level: From drop-down menu, select Warning or Error
 - Alarm Sound: From drop-down menu, select notification to use when the Alarm is triggered
 - None: No sound notification or flashing screen
 - Asterisk: Sound notification and flashing screen
 - Beep: Sound notification and flashing screen
 - **Exclamation:** Sound notification and flashing screen
 - Hand: Sound notification and flashing screen
 - Question: Flashing screen, no sound notification
 - **Custom:** Plays mp3 or wav file, no flashing screen. Sound will be played at the Remotes if the sound file is located in the Sync Folder on the NavView that is acting as the server in Network Services
- **Note:** Flashing screen notifications can be modified in Windows Settings>Ease of Access>Audio, see Figure 24-12.

Show audio al	erts visually
	erts for notifications are displayed
Flash the active wi	ndow \vee

FIGURE 24-12 WINDOWS VISUAL NOTIFICATION

- **Message:** Enter a message to be displayed when the Alarm is triggered
- Custom Sound File: Displays the selected Custom sound file, see Figure 24-13



6	Condition Result	t			_		\times
Co	ondition:			[A]>30			
	Alarm Result						
	Alarm Level		Warning				•
	Alarm Sound		Custom				-
	Message		Differential Loss				
С	istom Sound File:	C:\Users\	scott\Documents\Sou	Ind recordings\Difere	ntial Loss Ala	arm.mp3	▶
					O	K	Cancel

FIGURE 24-13 ALARM CONDITION EXAMPLE

4. Click **Okay** to accept the Condition setup.

Alarms Configuration	on						_		\times
⊿ Misc									
Name	G	SPS - Differential	Age						
– Data Sources ––––––								· (9 🕒
Data Source		Property	Units	Variable Name					
Devices/GPS/GGA/Di	iff Age	Value	Seconds 🛛 👻	A					
- Conditions									
							+	+ (₽
Condition	Alarm I	Level Messag	e		Sound				
[A]>30	Warnin	ng 👻 Differer	ntial Loss		Asterisk				-
						ОК	Cancel		Apply

FIGURE 24-14 ALARM EXAMPLE - GPS DIFFERENTIAL LOSS

In the example above an alarm will be triggered if the GPS Differential Age is greater than 30secs. **Variable A** being Diff Age as setup in **Data Sources**.

Note: Conditions can be edited in the Alarms Configuration window.

24.4 MONITORING ALARMS

Alarms can be monitored using the Alarms Status window and/or the Alarms Console window.

24.4.1 ALARMS STATUS

Alarm Status is accessed in Alarms section in the View Ribbon, see Figure 24-15.



FIGURE 24-15 ALARMS STATUS - VIEW RIBBON



Aları	m Status						
-	Station (1 item)						
	Name	Ack	Time Triggered	Time Since Triggered	Alarm Level	Message	OwningStation
	GPS - Differential Age				Ok		Station

FIGURE 24-16 ALARM STATUS WINDOW

- Name: Alarm Name
- Ack: Displays if alarm has been acknowledged

Note: The alarm can be acknowledged by right clicking on alarm and select **Acknowledge**. This will also acknowledge alarm in the Alarm Console window.

- **Time Triggered:** Displays time alarm was triggered
- **Time Since Triggered:** Displays duration of alarm
- Alarm Level: Okay, Warning or Error. See Syles tab, see Figure 24-3
- **Message:** Displays alarm message added in Alarm Configuration
- **Owning Station:** Indicates the NavView Station where alarm was triggered

Alarr	m Status							▼ □
-	Station (1 item)							
	Name	Ack	Time Triggered	Time Since Triggered	Alarm Level	Message	OwningStation	
	GPS - Differential Age		21-May-2024 20	0 s	Warning	Differential Loss	Station	

FIGURE 24-17 ALARM STATUS – ALARM TRIGGERED

24.4.2 ALARM CONSOLE

The Alarm Console is required to have Network Services enabled which is used to store the alarm events and broadcast to NavView Remote Clients. An alarm event is a record of an alarm being triggered, including the time and what condition was met.

Alarm events shown in the Alarm Console window can be accessed by selecting Console in Alarms section in the View Ribbon, see Figure 24-15. Alarm Console will automatically open if **Show Console** is enabled in the Alarm Service Configuration window. The user may then select the triggered alarms and acknowledge them.

To acknowledge an Alarm,

- 1. Select alarm to acknowledge.
- 2. Click the Acknowledge button or right click on alarm then select Acknowledge.

Note: This will also acknowledge alarm in the Alarm Status window.

Alarm events are cleared from the console display if they are both acknowledged and are no longer triggered (Cleared).



Alarm Co	nsole								▼ □
🔶 Pg. '	l of 1 🗼 (1 total)in.							Show All Ack	nowledge
Station	Date/Time (Local)	AlarmName	Level	Message	Condition	Acknowledged	Acknowledged Time (Local)	Cleared Time (Local)	
1	22-May-2024 13:19:47	Alarm Service/GPS - Differential Age	Warning	Differential Loss	Diff Age:Value(Seconds)>2				

FIGURE 24-18 ALARM CONSOLE – ALARM TRIGGERED

Alarm Co	nsole								-
🔶 Pg. 1	of 1 🔹 (1 total)in.							Show All Ack	
Station	Date/Time (Local)	AlarmName	Level	Message	Condition	Acknowledged	Acknowledged Time (Local)	Cleared Time (Local)	
	22-May-2024 13:19:47	Alarm Service/GPS - Differential Age	Warning	Differential Loss	Diff Age:Value(Seconds)>2		22-May-2024 13:22:04		

FIGURE 24-19 ALARM CONSOLE – ALARM ACKNOWLEDGED

Alarm C	onsole							- 🗆
🔶 Pg.	. 1 of 0 🔹 (0 total)in.							Show All Acknowledge
Station	Date/Time (Local)	AlarmName	Level	Message	Condition	Acknowledged	Acknowledged Time (Local)	Cleared Time (Local)

FIGURE 24-20 ALARM CONSOLE - ALARM ACKNOWLEDGED AND CLEARED

To show a historical list of Alarms, check the box **Show All**, see Figure 24-21.

Alarm Co	nsole							-	- 🗆	
🔶 Pg. 1	🗭 Pg. 1 of 1 📦 (18 total)in.									
Station	Date/Time (Local)	AlarmName	Level	Message	Condition	Acknowledged	Acknowledged Time (Local)	Cleared Time (Local)		
1	21-May-2024 11:06:56	Alarm Service/GPS - Differential Age	Warning	Differential Loss	Diff Age:Value(Seconds)>2		21-May-2024 11:07:26	21-May-2024 11:11:48	^	
	21-May-2024 11:17:27	Alarm Service/GPS - Differential Age	Warning	Differential Loss	Diff Age:Value(Seconds)>2	<	21-May-2024 11:18:08	21-May-2024 11:19:27	L	
1	21-May-2024 11:20:58	Alarm Service/GPS - Differential Age	Warning	Differential Loss	Diff Age:Value(Seconds)>2		21-May-2024 11:21:33	21-May-2024 11:22:19		
	21-May-2024 13:31:17	Alarm Service/GPS - Differential Age	Warning	Differential Loss	Diff Age:Value(Seconds)>2	<	21-May-2024 13:33:26	21-May-2024 13:48:06		
1	21-May-2024 13:58:27	Alarm Service/GPS - Differential Age	Warning	Differential Loss	Diff Age:Value(Seconds)>2	✓	21-May-2024 14:14:55	21-May-2024 14:00:12		

FIGURE 24-21 ALARM CONSOLE - ALARMS LISTING

24.4.3 TEXT WINDOW

Alarms can also be displayed in a Text window.

- 1. Open Configure Text Window dialog.
- 2. From Available Items expand Alarm Service then select Alarms to be displayed.



Title: Text				
Available Items Observations System Guidance Alarm Service Alarm Level Message GPS - Differential Age Alarm Level Message Vehicles FIGURE 24-22	Settings Templates * Layout *	Label GPS Alarm Level Message	Item Path Alarm Service/GPS - Differential / Alarm Service/GPS - Differential /	.ge/Message
ĸt				•
GPS Alarm Level				Warning
lessage			GPS Differe	ntial Loss

FIGURE 24-23 ALARM IN TEXT WINDOW

3. The Alarm message can be enabled to flash in the Text window by checking the Flashing box in Alarm Service Configuration dialog, Styles tab.

🅘 Alarm	Service Co	onfigurati	on		_		\times
Show (Console						
Alarms	Styles						
Ok	Warning	Error					
⊿ Ala	rm Result						
Ba	ckground		Rec	ł			
Fla	ashing						
Fo	nt Size		14				
Fo	reground		Wh	ite			
				OK	Cano	el	

FIGURE 24-24 ALARM MESSAGE ENABLED TO FLASH