

# ScadaPhone Wav Phrase Organizer

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# **OVERVIEW:**

After utilizing one of **ScadaPhone**'s **Alarm Browsers** or **Project Converters**, the construction of the **voice audio files should be analyzed for simplification** especially if a **Text To Speech (TTS)** generator is used to generate the voice files used by ScadaPhone.

It is important to have a high quality audio output for alarm messages for clarity.

Segmenting messages into logical phrases makes the messages more homogeneous and easier to understand.

ScadaPhone implements a **Wav Phrase Organizer** to facilitate this process. This document gives step-by-step instructions on its use.

**Note:** Before proceeding, it is strongly suggested that the **Audio Devices Options** settings (under the **Options** menu on **ScadaPhone's** main window) be set to **Use Soundcard When Possible**. Otherwise, you will be unable to hear **TTS** word renderings in the following steps.

Audio Device Options	?	x		
Use Sound Card Whe	n Possible			
When playing audio via telephone O Use telephone only (mute speaker) Use telephone and speaker				
ОК	Cancel	]		

# **Opening the Wav phrase Organizer**

To access the **Wav Phrase Organizer**, click the **Window** pull-down menu on ScadaPhone's main window. Before entering the **Wav Phrase Organizer**, a prompt to create a **Project Restore Point** will be displayed; it is a good idea to create a restore point just in case the **Wav Phrase** editing goes awry; click **Yes** to proceed. This action creates a backup file of the project with the letters (RP) in the file name. RP stands for Restore Point.

💋 ScadaPhone		-		x	
File Mode Options Window Logs Modem(s) Web Server	ScadaLink TTP Sched	uler Se	ssion	Help	
C:\ScadaTEC\ScadaPho Alarm Attribute Organizer					
Discretes (1890) Analc Tag Property Organizer	Menus (2) Wav Files (8	77)		< >	
Float New Record WAV File Phrase Organizer					
WAV Confirm			х		
Activit					
Aerate ? Would you like to create a project restore point bef	ore launching the WAV Phra	ise Orgar	nizer?		
Aerati					
Aerati	Yes No	Car	ncel		
Aerati					
WAV Phrase Organizer				_	
Compute Phrase Suggestions Analyze Word List Word Search					
Explanation Unique Message Count: 876					
Unique Word Count: 248					
WAV File Count: 248					
Alarm Messages			<u> </u>		
Accepted (0) C Proposed (948)			😢 Re	ejected (0)	Flagged (0)
Activity Monitor PLC Buffer	Count Used Phrase	1			
Aerator 1 High Inlet Pressure					
Aerator 1 High Level Aerator 1 High Outlet Pressure					
Aerator 1 Low Inlet Pressure					
Aerator 2 High Inlet Pressure Aerator 2 High Level					
Aerator 2 High Outlet Pressure					
Aerator 2 Low Inlet Pressure Biggs Boosters SHUTDOWN					
	Play 🕀 Reserve	🐼 Re	aiact	👘 Discard	E More
Accept Phrase Show Instances 👸 Edit Word	P Hay Theselve			Discalu	MOIC
Alarm name at cursor : [\$System] ActivityMonitor_PLC_Buffer					
Alarm message at cursor : Activity Monitor PLC Buffer					
Play Occept Message			Exit W	/AV Phrase (	)rganizer 🗊

The **Wav Phrase Organizer** breaks all of the alarm voice messages into individual words and facilitates the process of identifying words which will be problematic when rendered through **Text To Speech**.

## Word Recognition and Replacement

The first function that should be done when starting this process is a complete inspection of the **Word** List; click the **Analyze Word List** menu item to open the **Word Recognition and Replacement** window:

Word Recognition and Replacement	_ D X
Words In Project (262)	Word Status
1	<unrecognized word=""></unrecognized>
10	<unrecognized word=""></unrecognized>
10.33	<unrecognized word=""></unrecognized>
10.34	<unrecognized word=""></unrecognized>
10.36	<unrecognized word=""></unrecognized>
11	<unrecognized word=""></unrecognized>
12	<unrecognized word=""></unrecognized>
14	<unrecognized word=""></unrecognized>
2	<unrecognized word=""></unrecognized>
3	<unrecognized word=""></unrecognized>
3-Phase	<unrecognized word=""></unrecognized>
4	<unrecognized word=""></unrecognized>
5	<unrecognized word=""></unrecognized>
6	<unrecognized word=""></unrecognized>
7	<unrecognized word=""></unrecognized>
7-8	<unrecognized word=""></unrecognized>
8	<unrecognized word=""></unrecognized>
9	<unrecognized word=""></unrecognized>
ALARM	ALARM
ATS	<unrecognized acronym=""></unrecognized>
AUTO	AUTO
Activity	Activity
Aeration	<unrecognized word=""></unrecognized>
Aerator	<unrecognized word=""></unrecognized>
Air	Air
Alarm	Alarm
Alarms	Alarms 🗸
<ul> <li>☐ Hide Recognized Words</li> <li>▶ Play</li> <li>▲ Accept</li> <li>▲ Show Instan</li> </ul>	ces 👔 Edit Apply, Save & Exit 🖨 📭

Note that the list of words will usually start with a lot of **numbers** before the alphabetized list of actual **words.** Declare simple integers are listed as **Unrecognized**.

To hear how **TTS** will render the words in this list, highlight the entry in question and click the **Play** button.

Another reason for examining all of the numeric references is to alter the way numbers such as **105** are pronounced: It may be preferred to pronounce numeric phrases like **Room 105** as "*room one o'five*" rather than "*room one hundred and five*" (which is how **TTS** will render **Room 105**).

# **Accepting Numeric Entries / Hide Recognized Words:**

Most numbers can be accepted as they are; to accept all of the numeric entries, highlight the whole block using **Shift-Left-Click** and click the **Accept** button:

💋 Word Recognition and Replacement		-		x
Words In Project (262)	Word Status			
1	1			^
10				
10.33	10.33			Ξ
10.34				
10.36				
11	11			
12	12			
14	14			
2				
3				
3-Phase	3-Phase			
4				
5				
6				
7				
7-8				
8				
9				
ALARM	ALARM			
ATS	<unrecognized acrony<="" td=""><td>m≻</td><td></td><td></td></unrecognized>	m≻		
AUTO	AUTO			
Activity	Activity			
Aeration	<unrecognized word=""></unrecognized>			
Aerator	<unrecognized word=""></unrecognized>			
Air	Air			
Alarm	Alarm			
Alarms	Alarms			~
Hide Recognized Words	ces 👔 Edit Appl	y, Save &	Exit 👜	<b>1</b>

**Note** that all of the **recognized** words are shown in green font; if you would like to reduce the size of the list so that only the **unrecognized** words remain visible, click the **Hide Recognized Words** box:

Words In Project (94)	Word Status	_
ATS	<unrecognized acronym=""></unrecognized>	~
Aeration	<unrecognized word=""></unrecognized>	
Aerator	<unrecognized word=""></unrecognized>	
Analog-Out-of-Range	<unrecognized word=""></unrecognized>	
Batt	<unrecognized word=""></unrecognized>	Ξ
Biggs	<unrecognized word=""></unrecognized>	
Bldg	<unrecognized word=""></unrecognized>	
CL	<unrecognized acronym=""></unrecognized>	
Ccomm	<unrecognized word=""></unrecognized>	
Chem	<unrecognized word=""></unrecognized>	
Chlor	<unrecognized word=""></unrecognized>	
Chrg	<unrecognized word=""></unrecognized>	
C1	<unrecognized word=""></unrecognized>	
Clearwell	<unrecognized word=""></unrecognized>	
Clrwell	<unrecognized word=""></unrecognized>	
Coltsfoot	<unrecognized word=""></unrecognized>	
Comm	<unrecognized word=""></unrecognized>	
Disch	<unrecognized word=""></unrecognized>	
Durgy	<unrecognized word=""></unrecognized>	
EF	<unrecognized acronym=""></unrecognized>	
Effl	<unrecognized word=""></unrecognized>	
Elec	<unrecognized word=""></unrecognized>	
Emerg	<unrecognized word=""></unrecognized>	
Exh	<unrecognized word=""></unrecognized>	
FTC	<unrecognized acronym=""></unrecognized>	
FTO	<unrecognized acronym=""></unrecognized>	
Fail-to-Close	<unrecognized word=""></unrecognized>	~
✓ Hide Recognized Words           ▶ Play         ⊘ Accept	tances 📸 Edit Apply, Save & Exit 🖨 📭	]

# Accepting Valid (Unrecognized) Words

**Note** that there may be numerous words in this list which are actually *valid* words. They are only listed as *unrecognized* because they do not yet exist in the **WordList.txt** file in ScadaPhone's program-file folder.

Valid words can be added to this list by *right-clicking* the valid word and selecting Add "word" to Standard Word List from the pop-up menu.

Words In Project (94	l) Word Sta	atus
ATS	<unreco< th=""><th>ognized Acronym&gt;</th></unreco<>	ognized Acronym>
Aeration	(III)	ornigod Word>
Aerator	Add "Aeration" to Standard Word List	Word>
Analog-Out-	Copy "Aeration" to Windows Clipboard	Word>
Batt	Conrect	gnizeu Word>
Biggs	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Bldg	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
CL	<unreco< td=""><td>ognized Acronym&gt;</td></unreco<>	ognized Acronym>
Comm	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Chem	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Chlor	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Chrg	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
1	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Clearwell	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Clrwell	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Coltsfoot	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Comm	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Disch	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Durgy	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
EF	<unreco< td=""><td>ognized Acronym&gt;</td></unreco<>	ognized Acronym>
Effl	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
llec	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Emerg	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
Exh	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
FTC	<unreco< td=""><td>ognized Acronym&gt;</td></unreco<>	ognized Acronym>
FTO	<unreco< td=""><td>ognized Acronym&gt;</td></unreco<>	ognized Acronym>
Fail-to-Close	<unreco< td=""><td>ognized Word&gt;</td></unreco<>	ognized Word>
✓ Hide Recognize ▶ Play		🖹 Edit 🛛 Apply, Save & Exit 🕒 📭

All remaining words should be tested to hear how TTS will render them. If the uncommon name of a **street** or **town** is encountered, and it is rendered sufficiently well through TTS, simply **Accept** it.

## **Showing Words In Context:**

To improve recogistion of fragmented or abbreviated words it is helpful to view the context in which it is used. To see all messages in which a word-fragment occurs, highlight the word and click Show Instances:

💋 Word Recognition and Replace	ment		-		×
Words In Project (92)	Word	d Status			
Coltsfoot	<unr< td=""><th>ecognized W</th><th>ord&gt;</th><td></td><td>~</td></unr<>	ecognized W	ord>		~
Comm	<unr< td=""><th>ecognized W</th><th>ord&gt;</th><td></td><td></td></unr<>	ecognized W	ord>		
Disch	<unr< td=""><th>ecognized W</th><th>ord&gt;</th><td></td><td></td></unr<>	ecognized W	ord>		
Durgy	<unr< td=""><th>ecognized W</th><th>ord&gt;</th><td></td><td></td></unr<>	ecognized W	ord>		
EF	<unr< td=""><th>ecognized A</th><th>cronym&gt;</th><td></td><td></td></unr<>	ecognized A	cronym>		
Effl	<unr< td=""><th>ecognized W</th><th>ord&gt;</th><td></td><td></td></unr<>	ecognized W	ord>		
Elec	<unr< td=""><th>ecognized W</th><th>ord&gt;</th><td></td><td></td></unr<>	ecognized W	ord>		
Emerg	<unr< td=""><th>ecognized W</th><th>ord&gt;</th><td></td><td></td></unr<>	ecognized W	ord>		
Exh	<unr< td=""><th>ecognized W</th><th>ord&gt;</th><td></td><td></td></unr<>	ecognized W	ord>		
FTC	<unr< td=""><th>ecognized A</th><th>cronym&gt;</th><td></td><td></td></unr<>	ecognized A	cronym>		
FTO	<unr< td=""><th>ecognized A</th><th>cronvm&gt;</th><td></td><td>×</td></unr<>	ecognized A	cronvm>		×
Hide Recognized Words					
Play Accept	Show Instances	a e e 🍋	Analy Caus	• E.J 🗗	~
Play Occept	Show Instances	💦 Edit	Apply, Save	α Exit 🖽	37
🦻 Phrase Instances					
8 instances of: <b>Exh</b>					
? Pettee St Elec Rm Exh	Fan Fail-to-Run Z	ALARM			
🕐 Pettee St Elec Rm Exh	Fan Not AUTO ALAF	RM			
🕐 Pettee St Elec Rm Exh	Louver FTC ALARM				
🕐 Pettee St Elec Rm <mark>Exh</mark>	Louver FTO ALARM				
🕐 Pettee St Pump Rm <mark>Exh</mark>	Fan Fail-to-Run A	ALARM			
🕐 Pettee St Pump Rm <mark>Exh</mark>	Fan Not AUTO ALAF	RM			
🕐 Pettee St Pump Rm <mark>Exh</mark>					
?) Pettee St Pump Rm <mark>Exh</mark>	Louver FTO ALARM				
Play 🖉 Accept Hig	hlighted Phrase	Flag Highlighte	d Phrase	'≣'' Extrac	at Sub-Phrase

In the previous image, the **Exh** abbreviation stands for **Exhaust.** The problem is that the **TTS** generator has no way of knowing that. The resulting audio would be unintelligible over the phone.

If still unsure about a word after seeing it in the **Show Instances** context, simply **Accept** it for now and it can be dealt with later.

**Note** that this window makes a distinction between **Acronyms** and **Words**; TTS usually spells-out acronyms letter-by-letter. If the acronym actually spells a *valid word* or is a common acronym (such as **CL** for **Centiliters**) the TTS generator may enunciate the word instead of spelling it out. If this happens, the letter-by-letter enunciation can be forced by **inserting spaces between the letters**.

For all abbreviations and misspelled words which need to be changed into a valid word TTS can recognize, **editing** is required.

# **Editing Invalid Words**

To change all instances of invalid fragments into valid words, highlight the list item and click the **Edit** button:

🛛 💋 Word Recog	nition and Replacement		- 1		x
Words In Project (	32)	Word Status			
Effl		<unrecognized< td=""><td>Word&gt;</td><th></th><td>^</td></unrecognized<>	Word>		^
Elec		<unrecognized< td=""><td>Word&gt;</td><th></th><td></td></unrecognized<>	Word>		
Emerg		<unrecognized< td=""><td>Word&gt;</td><th></th><td></td></unrecognized<>	Word>		
Exh		<unrecognized< td=""><td>Word&gt;</td><th></th><td>≡</td></unrecognized<>	Word>		≡
FTC		<unrecognized< td=""><td>Acronym&gt;</td><th></th><td></td></unrecognized<>	Acronym>		
FTO		<unrecognized< td=""><td>Acronym&gt;</td><th></th><td></td></unrecognized<>	Acronym>		
Fail-to-Close		<unrecognized< td=""><td>Word&gt;</td><th></th><td></td></unrecognized<>	Word>		
Fail-to-Cls		<unrecognized< td=""><td>Word&gt;</td><th></th><td></td></unrecognized<>	Word>		
Fail-to-Open		<unrecognized< td=""><td>Word&gt;</td><th></th><td></td></unrecognized<>	Word>		
Fail-to-Opn		<unrecognized< td=""><td>Word&gt;</td><th></th><td></td></unrecognized<>	Word>		
Fail-to-Run		<unrecognized< td=""><td></td><th></th><td></td></unrecognized<>			
Fdbk		<unrecognized< td=""><td>Word&gt;</td><th></th><td>×</td></unrecognized<>	Word>		×
Hide Recogniz	ed Words				
▶ Play	📀 Accept 🛛 🖓 Show Instanc	es 👸 Edit	Apply, Save	& Exit 👜 😰	
	💋 Replace Word/Phrase			x	
	1 instance exists         0 in Accepted alarm messages         1 in Proposed alarm messages         ● Play         Old Word/Phrase         ● Play         New Word/Phrase         ● Play         Fail to close         ● Replace Globally	Replace Instance	S Cancel	]	

The **Edit** button opens the **Replace Word/Phrase** window. In this window, a replacement phrase can be entered into the edit box and you can verify that the replacement will be rendered correctly via TTS by clicking the **Play** button and listening to the result. When a suitable replacement has been entered, click the **Replace Globally** button.

Upon returning to the **Word Recognition and Replacement** window; note that the **New Word/Phrase** from the editing window will appear in the **Word Status** column.

After all of the unrecognized words and acronyms have been **accepted** or **edited**, there should be no red items remaining in the **Word Status** column. At this point, click the **Apply Save & Exit** button.

Word Recognition and Replacement	_ <b>_</b> ×	
Words in Project (65)	Word Status	
Fail-to-Open	Fail To Open	~
Fail-to-Opn	Fail To Open	
Fail-to-Run	Fail To Run	
Fdbk	Feedback	
Flat-Line	Flatline	
GEN	Generator	
Gen	Generator	
HH	High High	
HI-HI	High High	
HIHI	High High	
H1-H1	High High	
Hi-Lift	High Lift	
High-High	High High	
Hydro-pneumatic	Hydro Pneumatic	
Hyop	Hypochlorite	
Нуро	Hypochlorite	
Infl	Influent	
LL	LOW LOW	_
LO	Low	~
Hide Recognized Word:	ncez 👸 Edi Apply, Save & Ext 🖄 🕑	

### **Selecting Phrases**

After closing the **Word Recognition and Replacement** window, you will be returned to the **Wav Phrase Organizer** window; the next phase of this process is to pick the best reoccurring-phrase collection to minimize the wav file count and produce the best audio results for the sake of clarity when reporting the alarm messages over the phone.

A good first step in this process is clicking the **Compute Phrase Suggestions** menu item:

💋 WAV Phrase Organi	ter		_ <b>D</b> X
Compute Phrase Sugge	stions Analyze Word List Word Search		
Explanation Unique Message Count: Unique Word Count 248 WAV File Count 210 Alarm Messages Accepted (0) Activity Monitor Activity Monitor Aerator 1 High Ir Aerator 1 High Ir Aerator 1 High Q	Proposed (948) PLC Buffer ^ PLC Watchdog let Pressure vel	Phrases Count Used Phrase	cted (0) 🏲 Flagged (0)
Aerator 1 Low In	I		
Aerator 2 High I	Wave Phrase Suggestions		×
Aerator 2 High L Aerator 2 High O	Re-Compute Suggestions		
Aerator 2 Low In	Count Reoccurring Word Combination	(Phrase)	
Biggs Boosters S	69 Spare Alarm		^
	48 Torr Reg		
<	□ 36 Well 4		
Instance Count = 3 (0.	31 Torr Reg Spare Alarm		
Accept Phrase	30 Well 5     29 Pettee Street Well     29 Well 6		
Alarm name at cursor :	29		
Alarm message at cursor :	28 Signal Fault		
	26 Not In Auto Alarm		
🕨 Play 🔰 🌔	24 Flow Alarm		
	23 1 Fail To Run Alarm		
	21 2 Fail To Run Alarm     21 Critical Alarms		
	21 Critical Alarms     21 Fault Alarm		
	20 Flow Low Alarm		
	□ 18 Level Low Alarm		
	☐ 18 Timber Lake		
	17 Entry Alarm		
	17 Not Auto Alarm		~
		heck Selected Item(s) Un-Check Selected I Highlighted List Item(s)	tem(s) 📃 Select All
		Show Instances Extract Sub Phrase(s)	Separate Sub-Phrase(s)
	Case Sensitive Filter	Edit/Replace Phrase Play 🕀 Reserv	
		ccept Checked Suggestions	

This list is ranked by number of **Reoccurring Word Combinations.** In this case, the phrase **"Spare Alarm"** was found **69** times. This is an indicator that there may have been some extraneous alarm definitions imported from the **DB Dump** file. The extraneous alarms can be removed later.

Note that some familiar buttons (Show Instances, Edit, Play) previously seen in the Word Recognition and Replacement window are also available on the Wav Phrase Suggestions window (and on the Wav Phrase Organizer window too). The **Show Instances** button is especially helpful on this window because it helps you make decisions about which high frequency phrases to **Accept** or **Reject**.

Start by placing a check mark next to all of the obviously good phrases, but refrain from checking the phrases which you are unsure about. The **Re-Compute Suggestions** menu item can be clicked after each group of good phrases have been accepted. Some phrases occur with high frequency, but are poor choices logically; these can be **Rejected** and they will no longer be shown as a suggestion.

🦻 Phrase Instances	Phrase Instances	x
29 instances of: Pettee Street Well	23 instances of: 1 Fail To Run Alarm	
Pettee Street Well 1 Fail To Run Alarm Pettee Street Well 1 Fault Alarm Pettee Street Well 1 Flow High Alarm Pettee Street Well 1 Flow Low Alarm Pettee Street Well 1 Flow Signal Fault Pettee Street Well 1 Level Low Alarm Pettee Street Well 1 Level Low Low Alarm Pettee Street Well 1 Level Signal Fault Pettee Street Well 1 Not Auto Alarm Pettee Street Well 2 Fail To Run Alarm Pettee Street Well 2 Fault Alarm Pettee Street Well 2 Fault Alarm Pettee Street Well 2 Flow High Alarm Pettee Street Well 2 Flow High Alarm Pettee Street Well 2 Flow Low Alarm	Biggs Chlorine 2 Pump 1 Fail To Run Alarm Biggs Hi Lift 1 Fail To Run Alarm Biggs Well 1 Fail To Run Alarm Eddy Caustic P 1 Fail To Run Alarm Eddy Chlorine 2 P 1 Fail To Run Alarm Eddy Vell 1 Fail To Run Alarm Eddy Well 1 Fail To Run Alarm Gillotti Chlorine 2 Pump 1 Fail To Run Alarm Gillotti Chlorine 2 Pump 1 Fail To Run Alarm Gillotti Hi Lift 1 Fail To Run Alarm Pettee Street Hisorv P 1 Fail To Run Alarm Pettee Street Hvoochlorite P 1 Fail To Run Alarm Play Accept Highlighted Phrase Image: Comparison of the performance of the perfo	
Pettee Street Well 2 Flow Signal Fault Pettee Street Well 2 Level Low Alarm		
Pettee Street Well 2 Level Low Low Alarm	Phrase Instances	×
Pettee Street Well 2 Level Signal Fault Pettee Street Well 2 Not Auto Alarm	21 instances of: 2 Fail To Run Alarm	
🕐 Pettee Street Well 3 Fail To Run Alarm	🕐 Biggs Chlorine 2 Pump <mark>2 Fail To Run Alarm</mark>	2
Pettee Street Well 3 Fault Alarm	2) Biggs Hi Lift 2 Fail To Run Alarm	
<ul> <li>Pettee Street Well 3 Flow High Alarm</li> <li>Pettee Street Well 3 Flow Low Alarm</li> <li>Pettee Street Well 3 Flow Signal Fault</li> </ul>	(?) Eddy Chlorine 2 P 2 Fail To Run Alarm (?) Eddy Well 2 Fail To Run Alarm (?) Gillotti Chlorine 2 Pump 2 Fail To Run Alarm	=
Pettee Street Well 3 Level Low Alarm	🕐 Gillotti Hi Lift <mark>2 Fail To Run Alarm</mark>	1
Pettee Street Well 3 Level Low Low Alarm	?) Pettee Street Hi Serv P 2 Fail To Run Alarm	
Pettee Street Well 3 Level Signal Fault Pettee Street Well 3 Not Auto Alarm	?) Pettee Street Hypochlorite P 2 Fail To Run Alarm ?) Pettee Street Transfer P 2 Fail To Run Alarm	
Pettee Street Well Shutdown Alarm	() Pettee Street Well 2 Fail To Run Alarm	
Pettee Street Well Shutdown Pending Alarm	(?) Renda Chlorine 2 Pump 2 Fail To Run Alarm	ĺ
Play Accept Highlighted Phrase Flag Highlighted	Play Accept Highlighted Phrase Flag Highlighted Phrase 👘 Extract Sub-Phrase	

Here are some examples of high-frequency phrases which should be rejected:

The messages containing the "Pettee Street Well" phrase would sound better if they were spoken as:

" Pettee street <pause> Well one <pause> Fail to run alarm" ...rather than:

" Pettee street well <pause> One <pause> Fail to run alarm".

All of the '*Well 1'*, '*Well 2'*... '*Well N*' phrases should be grouped together. Logically grouping the phrases makes a big difference in the clarity of the resulting message announcement.

## **Accepted Phrases**

After placing check marks next to several of the highest-ranked suggestions, click the **Accept Checked Suggestions** button and observe the changes made in the **Wav Phrase Organizer** window:

WAV Phrase Organizer	-		x	
Compute Phrase Suggestions Analyze Word List Word Search				
Explanation           Unique Message Count: 876           Unique Versage Count: 248           WAV File Count: 216				
Alarm Messages Phrases				
🖉 Accepted (0) 🕐 Proposed (948) 🛛 🖉 Accepted (10) 🕀 Reserved (0) 🔇 Rej	ected (0)	🎽 Flag	ged (1)	
Coltsfoot Intake Louver Failure Alarm				
Coltsfoot PLC Battery Low 21 21 Critical Alarms				
Coltsfoot Reg PLC Running State 24 24 Flow Alarm				
Coltsfoot Sod Hypochlorite Day Tank Low Alarm 18 18 Level Low Alarm				
Coltsfoot Spare Alarm 26 26 Not In Auto Alarm				
Coltagent Spare Alarm				
Coltafoot Spare Marm 40 40 IOFF Reg				
Coltsfoot Spare Alarm 30 30 Weil 4				
Coltsfoot Spare Alarm 30 30 Well 5				
Coltsfoot Spare Alarm 29 29 Well 6				
✓ 29 29 Well 7				
🖉 Accept Phrase 🖓 Show Instances 🏦 Edit Phrase	Discard	E M	ore	
Alarm name at cursor: [CriticalAlarmsCFT] CFT_ALM_56				
Alarm message at cursor: Coltsfoot Spare_Alarm				
Play Occept Message	V Phrase (	Organizer (	r)-	

Repeatedly clicking items in the **Accepted** tab list will incrementally advance through the **Proposed** message list (highlighting each instance of the phrase being clicked). This reveals that all of the **Accepted** phrases are marked in the **Proposed** list by replacing the **blanks** between words with **underscores**; these underscores will not be included in the final product; they are only used here to show which adjoining words are linked into accepted phrases.

The **Wav Phrase Suggestions** window is one way to select phrases, but you can also select phrases *manually* by highlighting desired word groupings in the **Proposed** list and clicking the **Accept Phrase** button:

💋 WAV Phrase Organizer	_ <b>□</b> ×			
Compute Phrase Suggestions Analyze Word List Word Search				
Explanation Unique Message Count: 876 Unique Word Count: 248 WAV File Count: 218	1			
Alarm Messages	Phrases			
Accepted (0) 🕐 Proposed (948)	Accepted (13) B Reserved (0) S Rejected (4) Flagged (1)			
Activity Monitor PLC Buffer	Count Used Phrase			
Activity Monitor PLC Watchdog	21 21 Critical Alarms			
Aerator 1 High_Inlet_Pressure	73 73 Fail To Run Alarm			
Aerator 1 High Level Aerator 1 High Outlet Pressure	24 24 Flow Alarm			
Aerator 1 Low Inlet Pressure	2 2 High Inlet Pressure			
Aerator 2 High Inlet Pressure	4 4 High Outlet Pressure			
Aerator 2 High Level	18 18 Level Low Alarm			
Aerator 2 High_Outlet_Pressure	26 26 Not In Auto Alarm 69 69 Spare Alarm			
Aerator 2 Low Inlet Pressure	48 48 Torr Reg			
Biggs Boosters Shutdown	36 36 Well 4			
	30 30 Well 5			
	29 29 Well 6			
Instance Count = 8 (0 Accepted + 8 Proposed)				
O Accept Phrase Show Instances 🖹 Edit Phrase	Play Reserve Reject Discard SMore			
Alarm name at cursor : [CriticalAlarmsSAL] SAL_ALM_07				
Alarm message at cursor: Aerator 1 High_Inlet_Pressure				
Play Occept Message	Exit WAV Phrase Organizer 🗊			

## **Accepting Messages:**

Whenever the **Play** button is enabled, you can hear the current status of the phrase grouping for the alarm at the cursor and get instant feedback of how the phrase grouping is improving (or degrading) the cadence of the alarm message.

As more and more phrases are **Accepted**, the items visible in the **Proposed** list will begin to be completely marked up into acceptable messages; blocks of acceptable messages can be moved from the **Proposed Alarm Messages** list to the **Accepted Alarm Messages** list by highlighting one or more lines of the **Proposed** list and clicking the **Accept Messages** button:

💋 WAV Phrase Organizer	_ <b>D</b> X				
Compute Phrase Suggestions Analyze Word List Word Search					
Explanation Unique Message Count: 876 Unique Word Count: 248 WAV File Count: 244					
Alarm Messages	Phrases				
Accepted (0) 🕐 Proposed (948)	📀 Accepted (55) 🕀 Reserved (0) 😵 Rejected (4) 🚩 Flagged (1)				
Activity_Monitor PLC_Buffer	Count Used Phrase				
Activity_Monitor PLC_Watchdog	2 2 Activity Monitor				
Aerator_1 High_Inlet_Pressure	8 8 Aerator 1				
Aerator_1 High_Level Aerator 1 High Outlet Pressure	8 8 Aerator 2				
Aerator 1 Low Inlet Pressure	1 1 Blower 1 Failed Alarm				
Aerator 2 High Inlet Pressure					
Aerator 2 High Level	2 2 Booster Pump 1 2 2 Booster Pump 2				
Aerator_2 High_Outlet_Pressure	2 2 Booster Pump 2 3 3 Boosters Shutdown				
Aerator_2 Low_Inlet_Pressure	13 13 Chlorine Pump 1				
Biggs Boosters_Shutdown	5 5 Chlorine Pump 2				
Biggs Chlorine_Pump_1 Fail_To_Run_Alarm	39 39 Chlorine Residual				
Biggs Chlorine_Pump_2 Fail_To_Run_Alarm Biggs Clearwell Level High Alarm	33 27 Clearwell Level				
Biggs Clearwell Level High Alarm 4 4 Coltsfoot East					
Biggs Clearwell Level Low Alarm 9 9 Common Alarm					
Biggs Clearwell Level Low Low Alarm	3 3 Control Power Fail Alarm				
Biggs Common_Alarm	21 21 Critical Alarms				
Biggs Control Power Fail Alarm	24 22 Discharge Pressure				
Biggs Critical_Alarms	17 17 Entry Alarm				
×	2 2 Exhaust Damper Failure Alarm				
	73 73 Fail To Run Alarm				
Instance Count = 1 (0 Accepted + 1 Proposed)	7 7 Flood Alarm				
🐼 Accept Phrase 🏾 🖓 Show Instances	Discard Breen				
Alarm name at cursor : 19 Alarm Messages Selected Alarm message at cursor : 19 Alarm Messages Selected					
Play Accept Messages (19) Exit WAV Phrase Organizer C					

Moving alarm messages into the **Accepted** list is the ultimate goal of this procedure; after all of the messages have been accepted, this process will be complete.

### **Accepted Messages**

The **Accepted** alarm messages list shows a color-coded display of the phrase groupings which is easier to see than the underscore mark-up on the **Proposed** alarm messages list:

💋 WAV Phrase Organizer	_ <b>_</b> X
Compute Phrase Suggestions Analyze Word List Word Search	
Explanation Unique Message Count: 876 Unique Word Count: 210 WAV File Count: 270	
Alarm Messages	Phrases
Accepted (948) (?) Proposed (0)	📀 Accepted (110) 🔀 Reserved (1) 😵 Rejected (9) 🚩 Flag < 🕨
Biggs Control_Power_Fail_Alarm	Count Used Phrase
Biggs Common_Alarm	30 24 High Lift
Biggs Clearwell_Level Low_Low_Alarm	6 6 High Lift 1
Biggs Clearwell Level_Low_Alarm	4 4 High Outlet Pressure
Biggs Clearwell_Level High_High_Alarm	12 6 High PH Alarm
Biggs Clearwell_Level High_Alarm	14 14 High Pressure Alarm
Biggs Chlorine_Pump_2 Fail_To_Run_Alarm	15 15 High Residual Chlorine Alarm
Biggs Chlorine_Pump_1 Fail_To_Run_Alarm	1 1 Hypochlorite Leak Alarm
Biggs Boosters_Shutdown	18 18 Level Low Alarm
Aerator_2 Low_Inlet_Pressure	118 44 Low Alarm
Aerator_2 High_Outlet_Pressure	11 10 Low Flow Alarm
Aerator_2 High_Level	2 2 Low Inlet Pressure
Aerator_2 High_Inlet_Pressure	2 2 Low Level Alarm
Aerator_1 Low_Inlet_Pressure	55 10 Low Low
Aerator_1 High_Outlet_Pressure	39 39 Low Low Alarm
Aerator_1 High_Level	12 12 Low PH Alarm
Aerator_1 High_Inlet_Pressure	7 7 Low Pressure Alarm
Activity_Monitor PLC_Watchdog	26 26 Not In Auto Alarm
Activity_Monitor PLC_Buffer	4 4 P S I Switch Alarm
Renda Well_14 Not_In_Auto_Alarm	169 169 Pettee Street
Renda Well_14 Low Flow_Alarm	12 12 Phase Loss Alarm
Renda Well_14 High Flow_Alarm 🗸	1 1 Dhoanhata Dumn Failad
Un-Accept Ind Instances of Sub-Phrase	Discard 🗄 More
Alarm name at cursor : [CriticalAlarmsBGS] BGS_BSTR_SHUTDOWN	
Alarm message at cursor : Biggs Boosters Shutdown	
▶ Play	Exit WAV Phrase Organizer 🗊

If you see any messages which need to be grouped differently, highlight them here, click the **Un-Accept** button and they will be returned to the **Proposed** list.

After all of the **Proposed** alarm messages have been **Accepted**, clicking the **Exit WAV Phrase Organizer** button will **write** all of the **Accepted message** constructions to the **Alarms** in the ScadaPhone project.

#### **Review of Results**

After exiting the **Wav Phrase Organizer**, click the **Alarms** tab of ScadaPhone's main window and doubleclick any alarm to examine the results of the **Wav File phrase grouping**:

Alarm Information			?	x		
Browse Alarms						
Alarm Type   Discrete Alarm  Analog Alarm  Local (store in Alarms.Local.txt)						
Tag/Alarm Name BGS_ALM07						
Ack Tag Name ArchestrA Detected: Using .Acked and .AckMsg fields						
Alarm Group CriticalAlarmsBGS Priority Normal Console Ack Time 00:00:00 Enabled Latching Phone Ack Console Ack Required Latching Console Ack Automatically Ack When Reported	Filter Delay Re-Alarm Delay Runtime Enable Exp Over Range Limit High High Limit High Limit Low Limit	Do Not Re-Alarm <blank> N/A N/A N/A N/A</blank>				
Inverse Trigger Logic (0=Active) Inverse Ack Logic (0=Acked)	Low Low Limit Under Range Limit					
Text message for email/alpha-	numeric pagers (opti	onal) Syntax Help M	ulti-Line Edi	t		
Biggs Well #1 Fail-to-Run ALARM			Bro	wse		
Display Format : Biggs Well #1 Fail-to-Run ALARM						
Voice Message Composition WavFile(Biggs) WavFile(Well 1) WavFile(Fail To Run Alarm)			[	Ŷ ₹		
Add Inse	ert Edit	Remove	'lay			
OK, Previous OK, N	ext OK, New	ОК (	Cancel			

Note that the Voice Message Composition now reflects the phrase grouping which was accomplished in the Wav Phrase Organizer. The alarm message used to consist of a *single* WavFile segment which had a name very similar to the Text message. It now has **3** WavFile segments which will render intelligibly via Text To Speech.

#### Wav File Removal

At this point, it would be a good idea to return to the **Wav Files** tab on ScadaPhone's main window and remove any unused wav files which were created during the **Wav Phrase Organizer** session and are no longer needed; in order to get the **Delete** menu item to become enabled, you must highlight any grayed-out (unused) wav file name:

💈 ScadaPhone 🗕 🗖 🗙	
File       Mode       Options       Window       Logs       Modem(s)       Web Server       ScadaLink       TTP       Scheduler       Session       Help         C:\ScadaTEC\ScadaPhone\Projects\NorthernRegional       Image: Complexity of the session       Image: Complexity of the session<	
Logs       Alarms (948)       Discretes (1890)       Analogs (6)       Strings (948)       Contacts (0)       Users (0)       Menus (2)       Wav Files (299)         Eloat       New       Record       Generate       Play       Edit       Delete         WAV File       Name       Delete       Delete       Delete       Delete	
7-8 9 Activity Monitor Aeration Aerator Aerator 1 Aerator 2 Air Alarm Analog	
Analog-Out-of-Range At ATS Auto Batery Battery Biggs Bidg Blower Blower 1 Failed Alarm Blower 2 Failed Alarm	
06:32:49 Development Mode	.::

#### **Wav File Generation**

Wav file names being displayed in red font to indicate that the file name is being referenced in one or more of the project alarms, but the wav file for that message does not yet exist. If you want to step through the Wav File generation process, you could double-click any of the red items (which will open up the **Edit Wav File** window) and click the **Generate** button for each empty file (such as is shown below with the gray window center box):

	ScadaPhone	-		x
File	💈 Edit Wav File ? 🗙	n Help		
C:\(	File Trim Pad Splice Audio Device Adjust Amplitude Find References	V 51	(270)	
L	File Name : Blower 1 Failed Alarm	Vav Files	(270)	
<u>E</u> lc W.	Play Generate			
7-8	No data in way file			
9				
Act Aei				=
Aer				
Aeı Air				
Ala				
Ani At				
AT	< >			
Auf Bat				
Big	OK, Prev OK, Next OK New OK Cancel			
Blo	ver 1 Failed Alarm			
Blow	ver 2 Failed Alarm			
Boos	ster ster Pump 1			
Boos	ster Pump 2			
	stare Shutdown			
06:40	:06 Development Mode			

After clicking the **Generate** button, a wav graph will appear; this lets you know that this file has been successfully rendered by the **Text To Speech** generator.

🛃 Edit Wav File	?	x
File Trim Pad Splice Audio Device Adjust Amplitude Find References		
File Name : Blower 1 Failed Alarm		
Start at sample #0		>
	harv	
a construction of the state		
Stop at sample #11790		>
OK, Prev OK, Next OK New OK Cancel		

To continue the manual-generation process, you could repeatedly click the **OK**, **Next** button and click **Generate** each time the "**Next**" file is displayed as an empty gray graph (meaning it doesn't yet exist); however, if there are more than a few dozen files to create, this is a very tedious process (but it does give you the chance to actually *hear* all of the rendered voice audio so that any problems missed while looking over the **Wav Phrase Organizer** results could be discovered).

A faster method to render all of the project wavs is to use the **Generate Missing Wav(s)** feature:

ScadaPhone		- 🗆	x
File         Mode         Options         Window         Logs         Modem(s)         Web Server         ScadaLink         TTP           C:\Users\Brad\Documents\ScadaTEC\ScadaPhone\ScadaPhone\ScadaPhoneTester\Project		ler (122) Sive Way	
Alarms (1608)       Discretes (2442)       Analogs (817)       Strings (9)       Contacts (8)       Users (4)       M         Eloat       New       Record       Generate       P       Generate Missing Wav(s)       X         WAV File Name       96       97       98       Generate Only The Selected Wav File       CellularModemIsNotResponding         99       AnalogAlarm       Generate All Missing Wav Files (123)       CellularModemIsNotResponding         Degrees       DiscreteAlarm       CellularModemIsNotResponding       CellularModemIsNotResponding         EmailServerConnectionFailed       Group1       Group3       ScadaLinkFailed       NormalPriority         Group6       Userees       Group7       Group6       DiscreteAlarm       HighPriority         13:10:14       Development Mode       Degrees       Group7       Group8       Group1       Group4       Group1       Group4       Group5       Group4       Group4       Group5       Group4       Group5       Group4       Group5       Group4       Group5       Group4       Group5       Group5       Group4       Group5       Group5	fenus (2) Sys Menus (9) Wav Fil	les (123) Sys Wav	

To enable the **Generate** menu item, highlight any WAV file name in the list; if an *existing* WAV file (black font) is highlighted, the prompt will *only* ask if you want to overwrite *that* file; if a *non-existing* WAV file name is highlighted (red font), the **Generate Missing Wavs(s)** window will be opened when the **Generate** menu item is clicked. Clicking the **Create All Missing Wav Files** button will create all of the required audio files.

After all of the necessary WAV files have been generated, the **Wav Phrase Organization** process is complete.

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