

Pennsylvania Automated Vehicle Incident Response Plan

Lifesavers National Conference

March 15, 2022

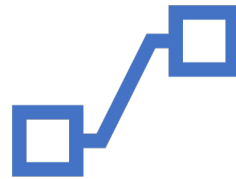


Automated Vehicle Incident Response Plan

Agenda



Overview of the AVIRP



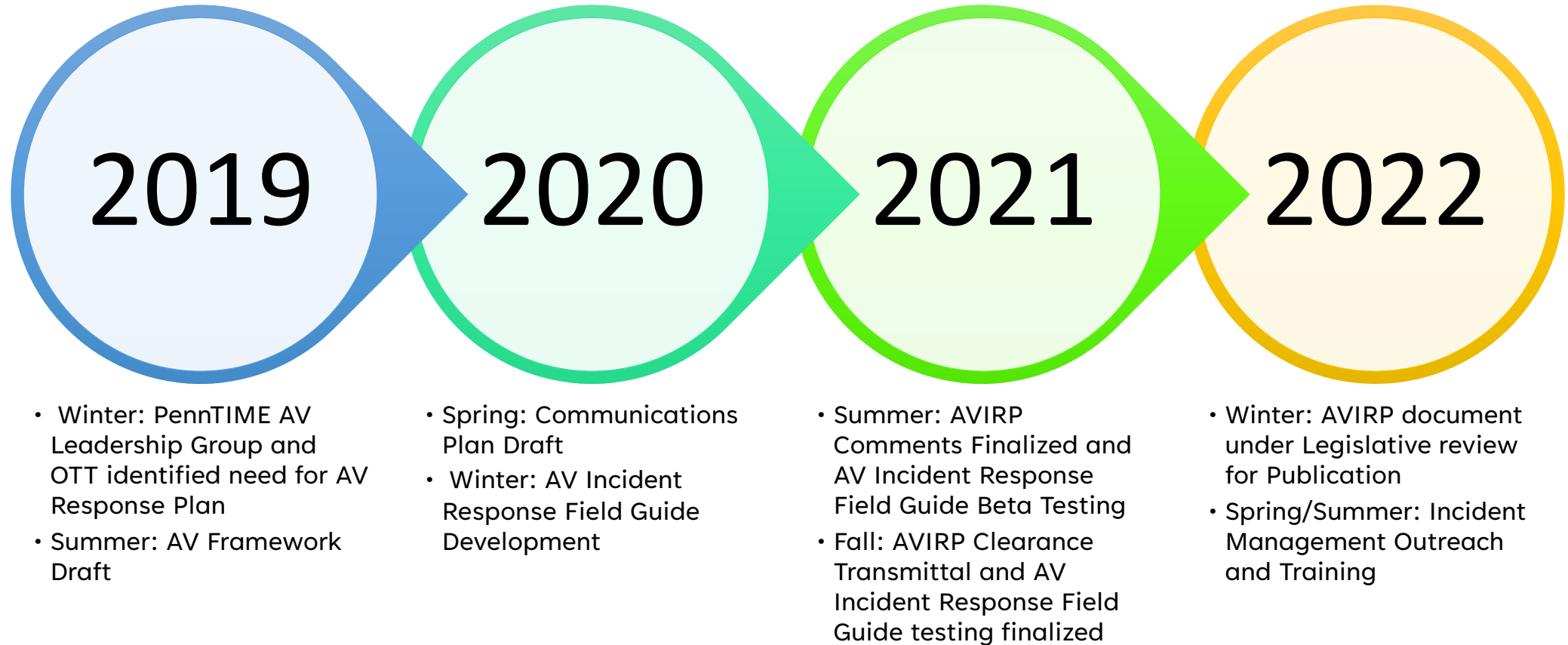
Communication Flow
Chart



Pennsylvania AV Incident
Response Field Guide

Automated Vehicle Incident Response Plan

Timeline Overview



Automated Vehicle Incident Response Plan

Overview



SAE J3016™ LEVELS OF DRIVING AUTOMATION™

Learn more here: sae.org/standards/content/j3016_202104

Copyright © 2021 SAE International. The summary table may be freely copied and distributed AS-IS provided that SAE International is acknowledged as the source of the content.

	SAE LEVEL 0™	SAE LEVEL 1™	SAE LEVEL 2™	SAE LEVEL 3™	SAE LEVEL 4™	SAE LEVEL 5™
What does the human in the driver's seat have to do?	You <u>are</u> driving whenever these driver support features are engaged – even if your feet are off the pedals and you are not steering			You are <u>not</u> driving when these automated driving features are engaged – even if you are seated in “the driver’s seat”		
	You must constantly supervise these support features; you must steer, brake or accelerate as needed to maintain safety			When the feature requests, you must drive	These automated driving features will not require you to take over driving	

Copyright © 2021 SAE International.

	These are driver support features			These are automated driving features		
What do these features do?	These features are limited to providing warnings and momentary assistance	These features provide steering OR brake/acceleration support to the driver	These features provide steering AND brake/acceleration support to the driver	These features can drive the vehicle under limited conditions and will not operate unless all required conditions are met	This feature can drive the vehicle under all conditions	
Example Features	<ul style="list-style-type: none"> • automatic emergency braking • blind spot warning • lane departure warning 	<ul style="list-style-type: none"> • lane centering OR • adaptive cruise control 	<ul style="list-style-type: none"> • lane centering AND • adaptive cruise control at the same time 	<ul style="list-style-type: none"> • traffic jam chauffeur 	<ul style="list-style-type: none"> • local driverless taxi • pedals/steering wheel may or may not be installed 	<ul style="list-style-type: none"> • same as level 4, but feature can drive everywhere in all conditions

Source: SAE International

Automated Vehicle Incident Response Plan

Overview

- AVIRP Goals
 - Ensure PennDOT and applicable stakeholders are aware of all reportable incidents involving an AV in Pennsylvania.
 - Ensure communications are maintained to assist in appropriate response and interagency coordination efforts.
 - Ensure all responders are equipped with appropriate incident response considerations to enhance safety by providing a mobile application to access while on-scene of an incident.
- Elements
 - Communication Flow Chart
 - Pennsylvania AV Incident Response Field Guide

Automated Vehicle Incident Response Plan

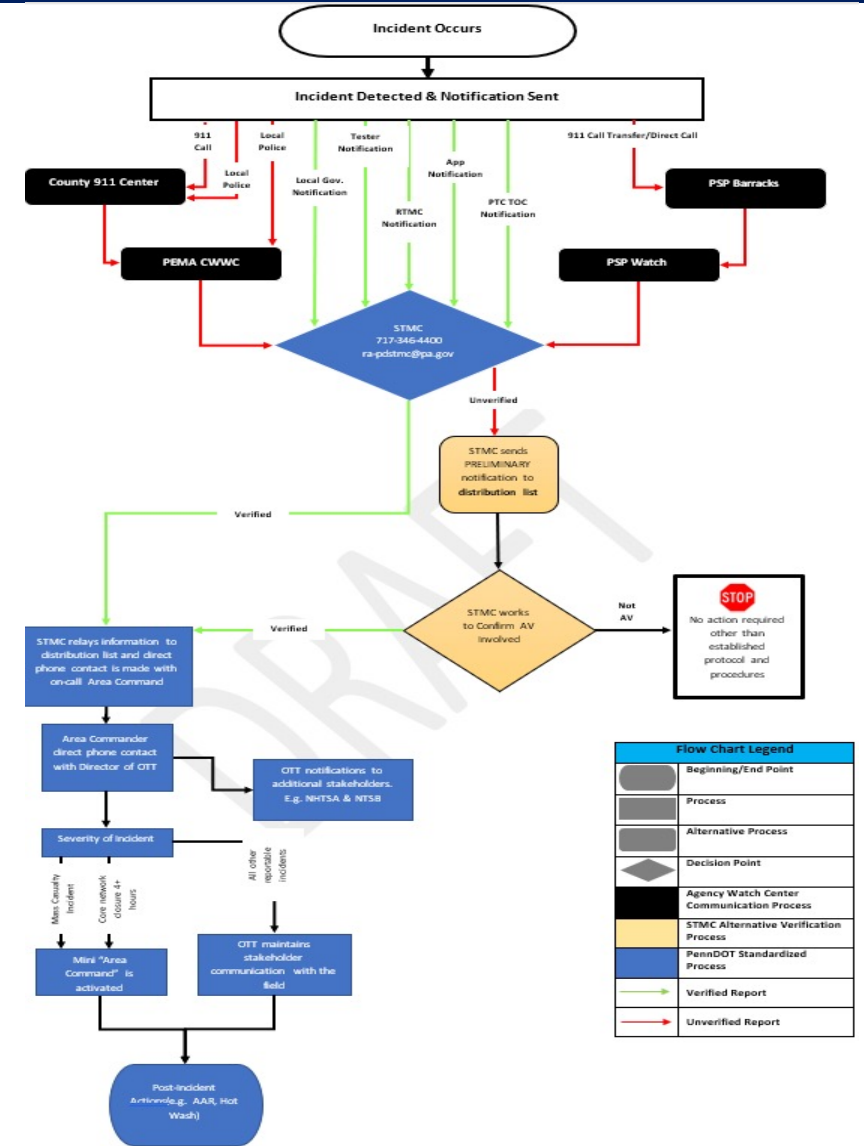
Communication Flow Chart



Outlines communication avenues from AV Incident Detection to Post-Incident Activities



Built-in notifications for impacted stakeholders



Pennsylvania AV Incident Response Field Guide

- Field Guide Goals

- Ensure all responders are aware of appropriate incident response considerations to ensure they safely respond to an AV/PDD incident.
 - Law Enforcement
 - Fire
 - Towers
- Ensure communication is maintained to assist with response and interagency coordination efforts.
- Ensure PennDOT is aware of all reportable AV/PDD incidents.



Automated Vehicle Incident Response Plan

Field Guide Components

The screenshot displays the AVIRP-FG web interface. At the top, there is a header with the Pennsylvania Department of Transportation logo and the text 'AVIRP-FG'. Below the header, there are two main sections: 'Tester Information' and 'Vehicle Information'.

Tester Information:

- TESTER: Automated Innovations Incorporated
- ADDRESS: 30 North Third Street Harrisburg, PA 16787
- PRINCIPAL POINT OF CONTACT - TITLE: Christy [REDACTED]
- COMMENT: Eric F [REDACTED]
- TESTER EFFECTIVE DATE: 2021/06/07
- MAILING ADDRESS: [REDACTED]
- CONTACT NUMBER: [REDACTED]
- EMAIL: [REDACTED]

Buttons: EDIT TESTER INFORMATION, DELETE TESTER

Vehicle Information:

Filters: All, Automated, PDD, Engine Type, Search, Incident, CLEAR

Rank	Type - VIN	Issued State - License Plate	Year - Make - Model	Engine Type	Incident Count	Fields	Actions
1	Automated - 123456547H	PA - ABR1234	2017 Ford Fusion	Hybrid	3	R S E T F I	EDIT, DELETE
2	PDD - 7867	CA	2016 Volkswagen Bug	Hybrid	0	R S E 4 F I	EDIT, DELETE
3	PDD - 7899	CA					EDIT, DELETE



The screenshot shows the AVIRP-FG mobile app interface. At the top, there is a header with the text 'AVIRP-FG'. Below the header, there is a search bar with the text 'Search for Vehicle/PDD'. There are two tabs: 'Automated' and 'PDD'. Below the tabs, there is a text input field for 'License Plate Number' and a 'FIND' button.

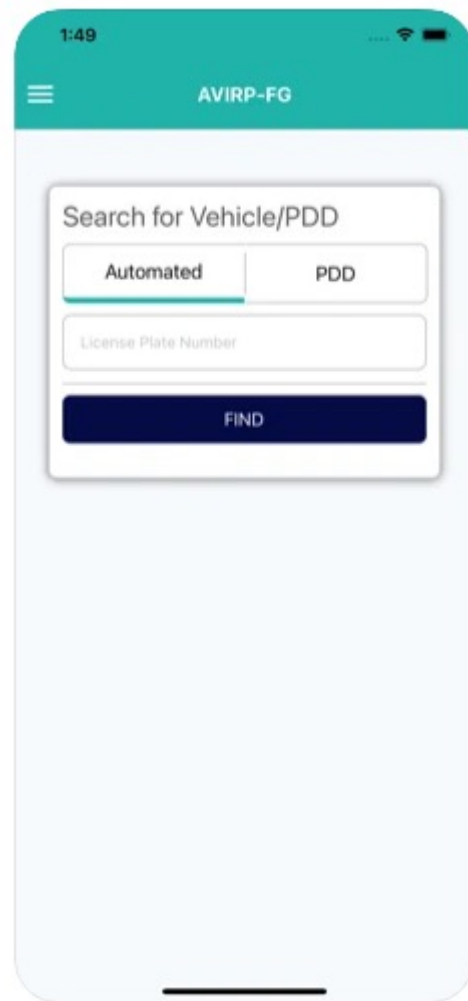
Backend Database

Mobile App

Automated Vehicle Incident Response Plan



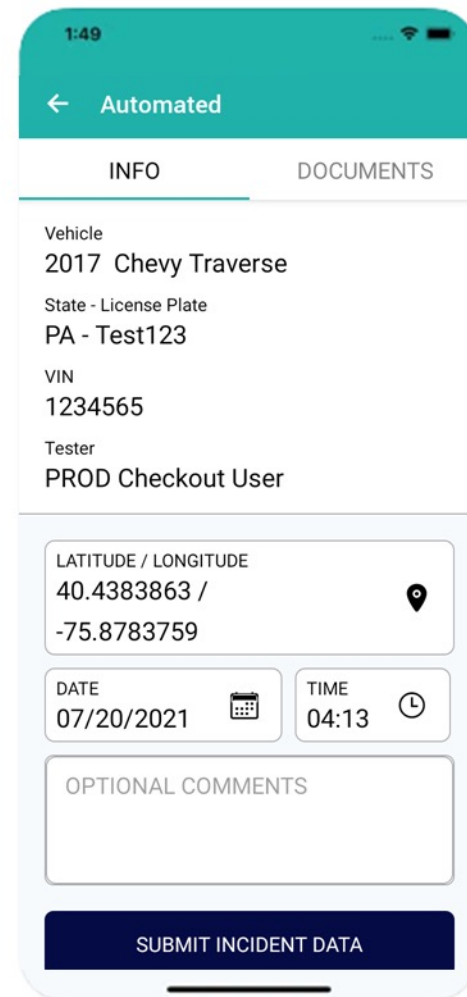
Sign into business partner account



Enter license plate or PDD unique ID



PennDOT
alerted the app
is being used



Access relevant information

← Access Response Info

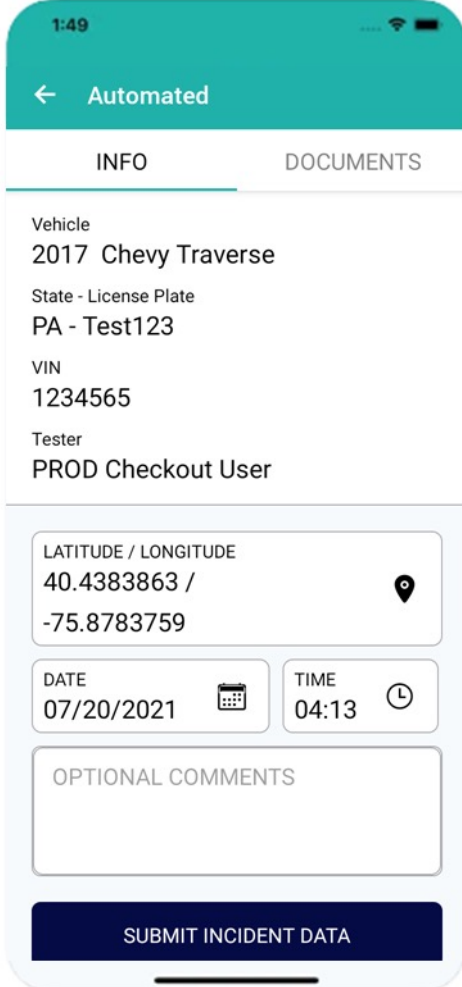
← Vehicle/Tester Information

← 1-click Incident Reporting

Automated Vehicle Incident Response Plan

Pennsylvania AV Incident Response Field Guide

- Incident Response Information
 - How to Secure the Vehicle
 - Location of Documentation
 - Extrication Considerations
 - Towing Considerations
 - Firefighting Considerations
 - Post-Incident Considerations



The screenshot shows a mobile application interface for reporting an incident. At the top, the time is 1:49. The app title is "Automated" with a back arrow. Below the title are two tabs: "INFO" (selected) and "DOCUMENTS". The "INFO" tab displays the following details:

- Vehicle: 2017 Chevy Traverse
- State - License Plate: PA - Test123
- VIN: 1234565
- Tester: PROD Checkout User

Below the vehicle information is a section for "LATITUDE / LONGITUDE" with the coordinates 40.4383863 / -75.8783759 and a location pin icon. To the right of the coordinates is a "DATE" field showing 07/20/2021 with a calendar icon, and a "TIME" field showing 04:13 with a clock icon. Below these fields is a text input area labeled "OPTIONAL COMMENTS". At the bottom of the screen is a dark blue button labeled "SUBMIT INCIDENT DATA".

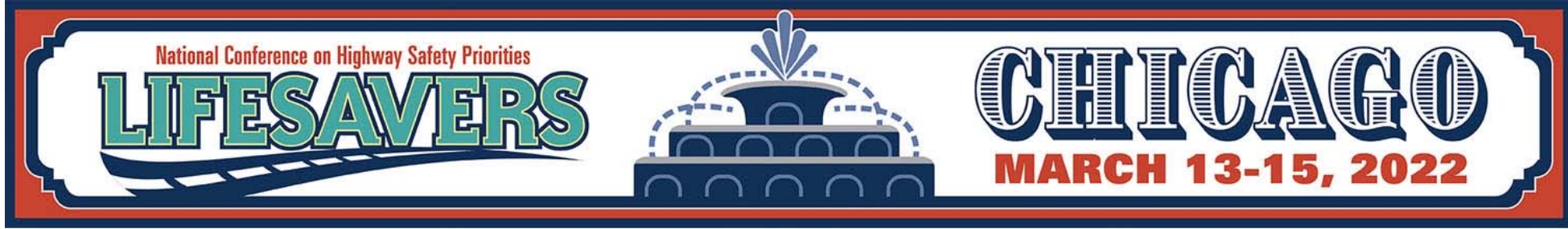
← Access Incident Response Information

Automated Vehicle Incident Response Plan

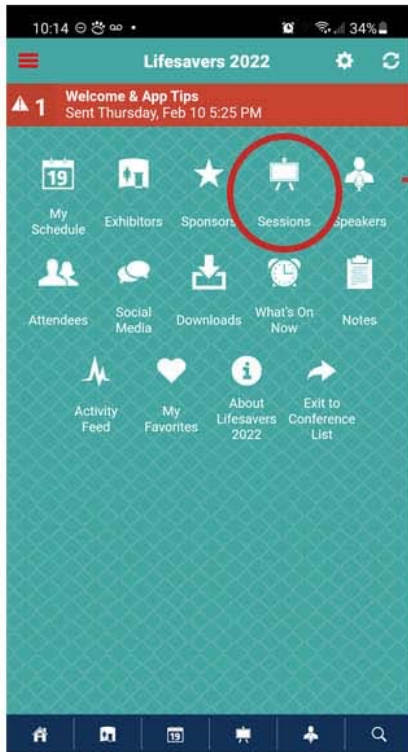
Thank You!

Gabby Benson, Incident Management & TMC Operations Specialist, Drive Engineering
Email: gabby@driveengineering.com Office: 717.553.2930





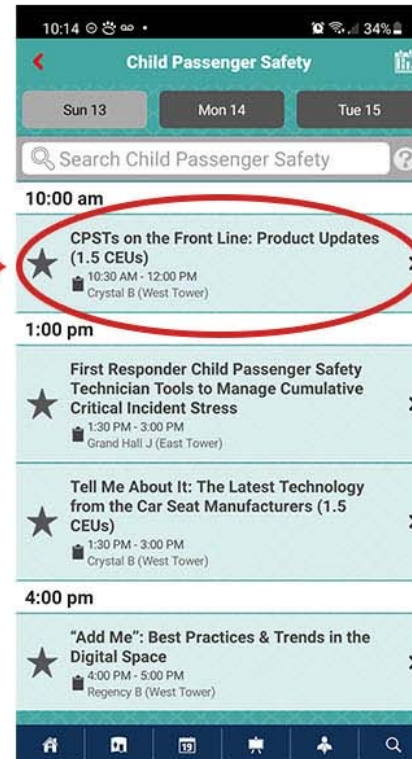
Please evaluate this presentation using the Lifesavers Conference Mobile App



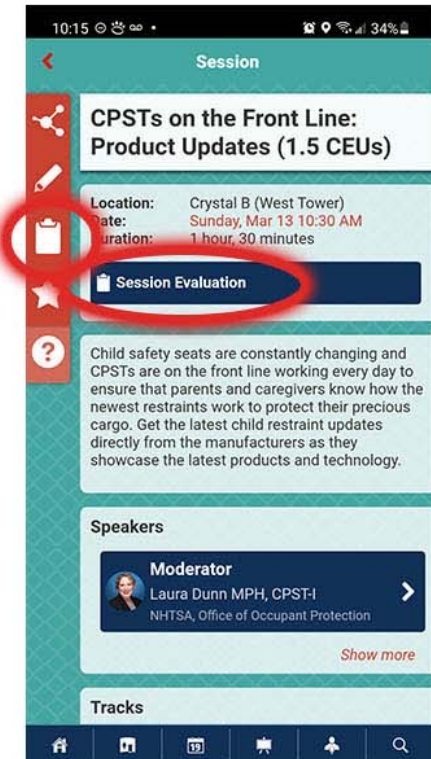
SELECT SESSIONS ICON



SELECT APPLICABLE TRACK



SELECT APPLICABLE WORKSHOP



CLICK SESSION EVALUATION BUTTON (OR) CLIPBOARD ICON