TOYOTA
Technical Service Bulletin

Supra Reprogramming Guide

Service Category	General		
Section	Preparation	**Market** USA	

Toyota Supports
ASE Certification

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2020	Supra	

Introduction

Flash reprogramming allows the Electric Control Unit (ECU) software to be updated without replacing the ECU. Flash calibration updates for the Supra are released as field-fix procedures described in individual service bulletins. This bulletin details the ECU flash reprogramming process and outlines use of the Toyota-ISTA Diagnostic Software. BEFORE beginning any reprogramming, ensure that the latest version of Toyota-ISTA is downloaded and installed from TIS.

> **NOTE**
>
> ECU is a Toyota term used to describe integrated computerized devices responsible for managing the operation of a system or subsystem. For the purposes of this bulletin, the term "ECU" is used as a generic label for the following SAE J1930 standard references:
>
> - Powertrain Control Module (PCM)
> - Engine Control Module (ECM)
> - Transmission Control Module (TCM)
> - Any other Toyota specific control unit

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

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Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream ADVi*	Snap-On	TSADVUNIT	1

*Essential SST.

> **NOTE**
> - Supra Diagnostic Software Toyota ISTA version 14.18.21.18585 or later is required. ISTA software is available for download at *TIS – Diagnostics – Scantool.*
> - Additional Techstream ADVi units may be ordered through the Techstream Order Portal at *TIS – Diagnostics – Scantool.*

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
Supra Diagnostic Cable*	01018-00118	1
DSS-5000 Battery Diagnostic Tool*	DSS-5000P T	1
DCA-8000 Battery Diagnostic Tool*	DCA-8000P T	1

*Essential SST.

> **NOTE**
> Additional SSTs may be ordered by calling 1-800-933-8335.

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Techstream ADVi Preparation

1. Complete ALL pending Windows updates.

2. Disable ANY automatic Windows reboot features.

3. Disable ALL automatic screensavers.

4. Disable ALL automatic sleep features.

5. Close ALL other applications.

6. Attach the Techstream ADVi directly to an AC power supply.

7. Do NOT perform ANY other functions while Toyota-ISTA is reprogramming.

ISTA Preparation

> **NOTICE**
>
> **BEFORE proceeding further, ensure you have downloaded and installed the latest version of Toyota-ISTA from TIS. The calibration and reprogramming information is stored locally within Toyota-ISTA. <u>Attempting to reprogram a vehicle with an outdated version of ISTA may lead to an incomplete repair</u>.**

Checking the installed Toyota-ISTA version:

1. Click on the configuration button as shown.

Figure 1.
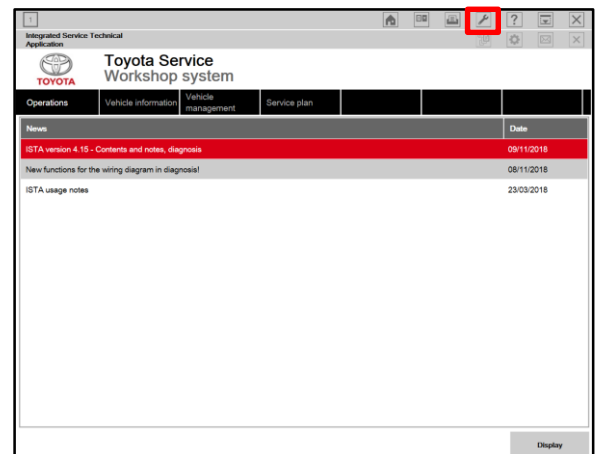
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ISTA Preparation (continued)

2. Compare the installed version to the latest available version from TIS.
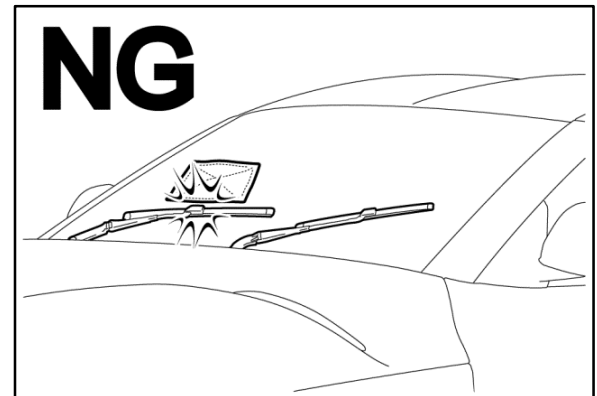
Figure 2.
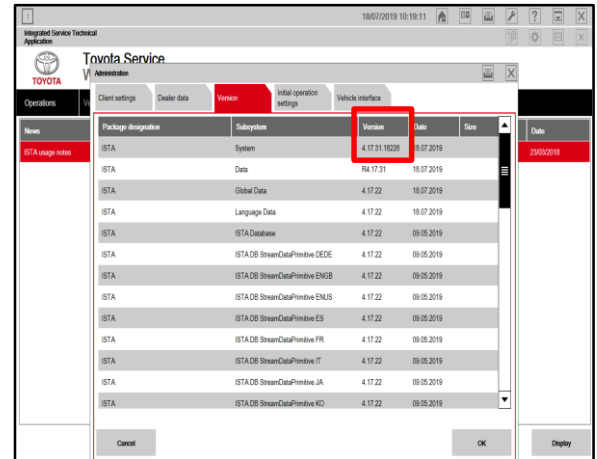
Repair Procedure

Preparation

> **NOTE**
>
> Certain functions in Toyota-ISTA can trigger activations of components in the connected vehicle. BEFORE activating components, make sure no one is in the area.

1. Do NOT place anything on the windshield, as the windshield wipers may activate during diagnosis or programming.

Figure 3.

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Repair Procedure (continued)

Preparation (continued)

2. Ensure no objects are placed on the front seats.

Figure 4.

3. Do NOT cover the headlights, as they may activate during reprogramming and become hot.

Figure 5.
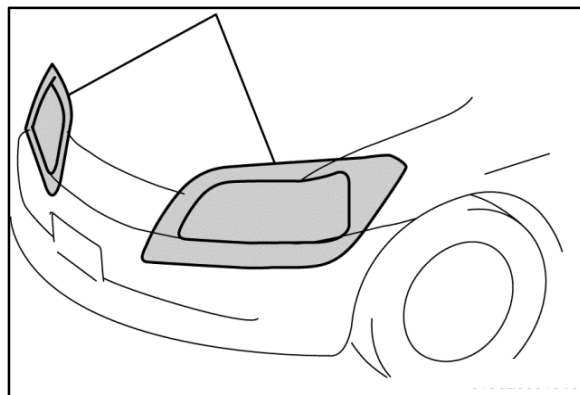
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Repair Procedure (continued)

Battery Specifications and Battery Charger Usage

> **NOTE**
>
> BEFORE starting the reprogramming procedure, make sure you have connected the DCA-8000 battery charger. The use of a charger during the ECU software update process is mandatory.
>
> Unlike other Toyota vehicles, the Supra is capable of drawing high amperage during diagnosis and repair. The Supra is equipped with an AGM-type battery and discharges will affect the life span of the battery. AGM batteries MUST NOT have a charging voltage that exceeds 14.6V.

Connecting the Battery Charger

Connect the battery charger to the charging terminals located under the hood. Observe proper polarity when connecting the charger. Do NOT attempt to connect the battery charger directly to the battery terminals.

Figure 6.
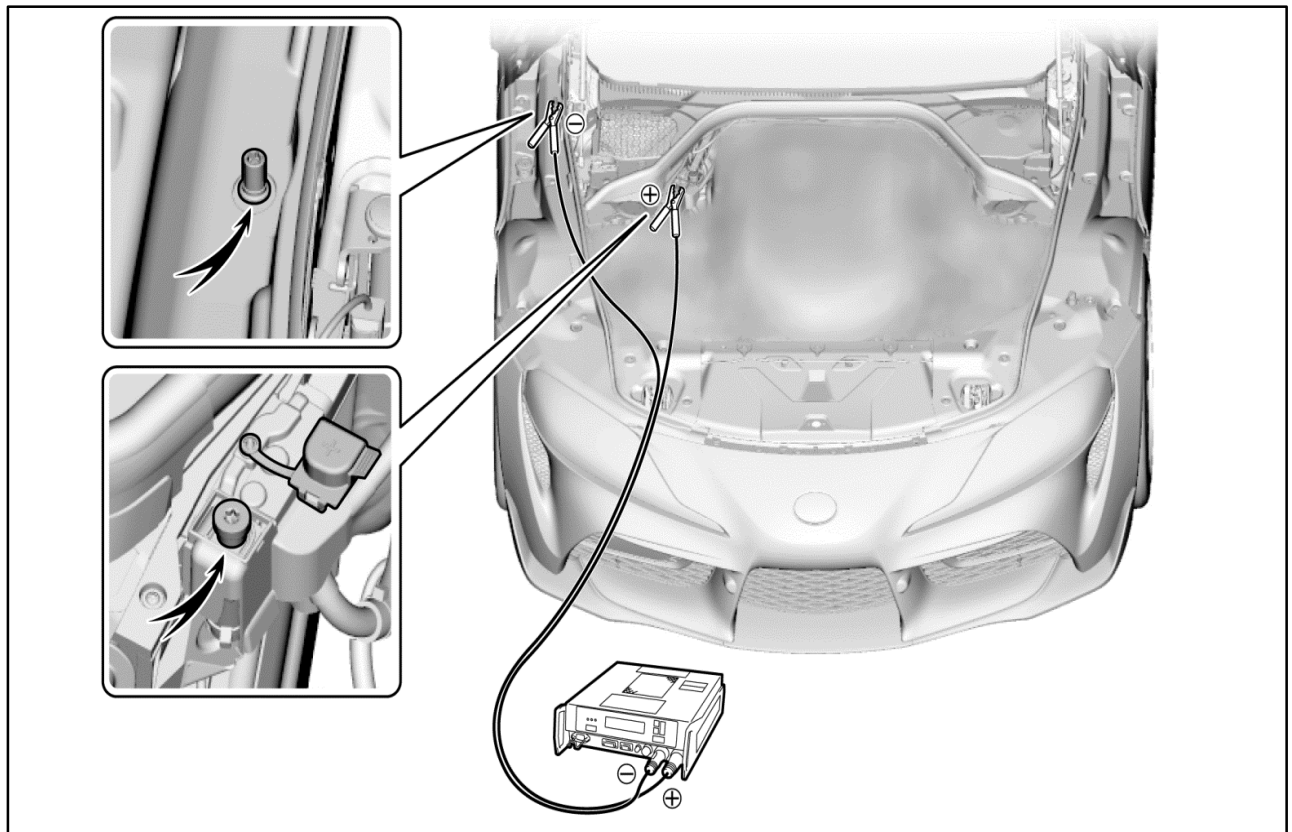
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Repair Procedure (continued)
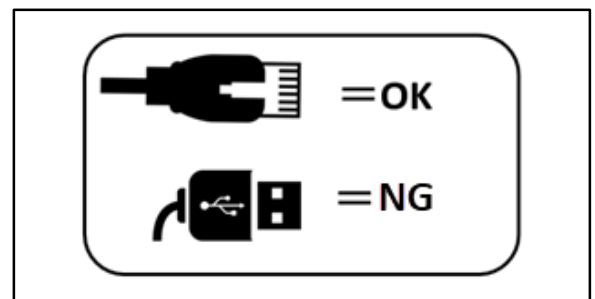
ISTA Diagnostic Cable

1. Connecting the cable.

   In the case of diagnosis and reprogramming, it is an **absolute necessity** that the vehicle is connected to the Techstream ADVi via the Toyota Supra diagnostic cable, which has a LAN ethernet connection.

   > **NOTICE**
   >
   > **In order to maintain successful communication between the Techstream ADVi and the vehicle, the Toyota Supra diagnostic cable must be used. Other interfaces that connect to the Techstream ADVi via USB are NOT allowed. Attempting to use such other devices may cause permanent ECU damage due to the slower communication speed.**

Figure 7.

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Repair Procedure (continued)

ISTA Diagnostic Cable (continued)

2. Positioning the cable.

   The Supra diagnostic cable should ALWAYS be passed through the position shown below. If it passes through ANY other position, it is possible the cable will be damaged.

   Using the gap between the rear fender and the side garnish, pull the Supra diagnostic cable to the outside of the vehicle. Use protective tape to fix and protect the cable.

   Figure 8.
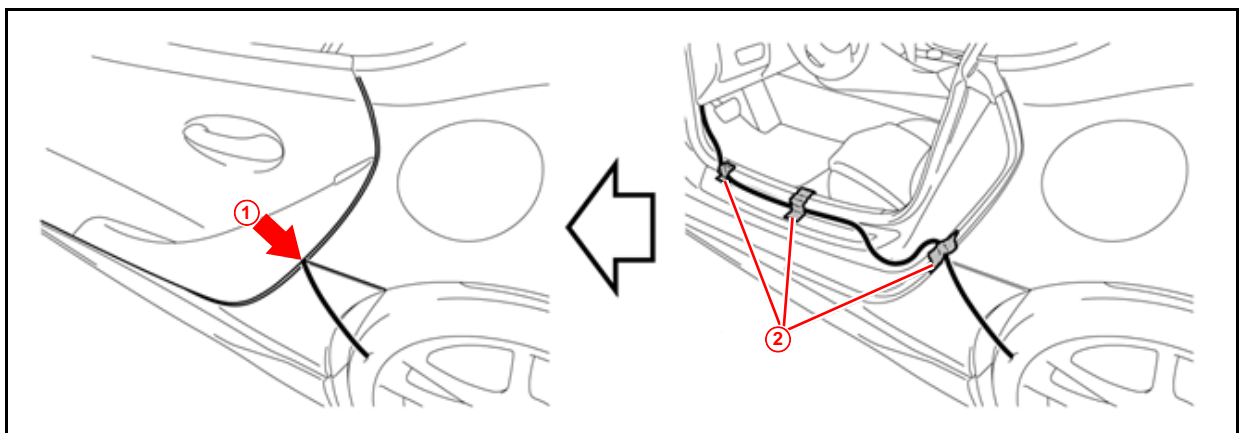
1	Correct Position of Supra Diagnostic Cable
2	Tape

> **NOTICE**
>
> **Do NOT attempt to pass the Supra diagnostic cable through the window opening. The window glass may move during reprogramming, diagnosis, or initialization and damage the cable. Additionally, do NOT attempt to pass the Supra diagnostic cable through ANY other position of the door opening as it may cause damage to the cable.**
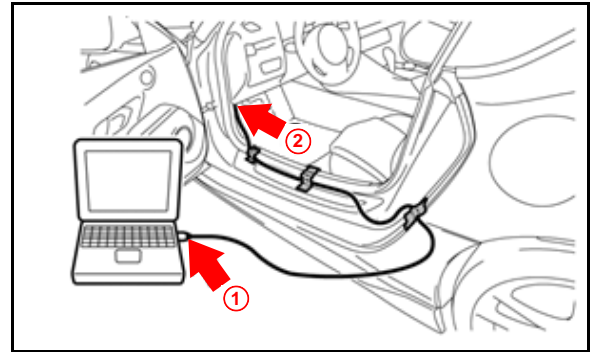
Figure 9.
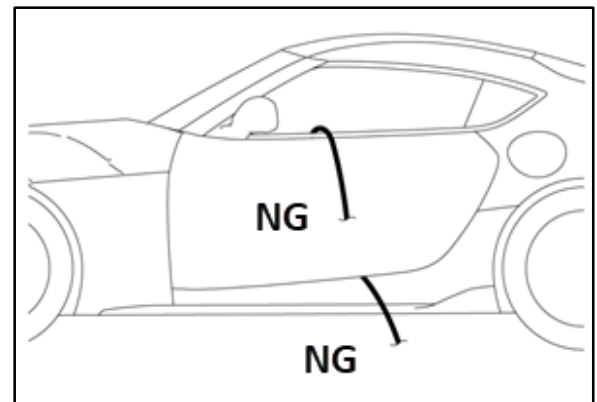
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Repair Procedure (continued)

ISTA Diagnostic Cable (continued)

3. Ensure the proper sequence.

   ALWAYS connect the Supra diagnostic cable to the LAN port of the Techstream ADVi BEFORE connecting to the OBD port of the vehicle. Performing this order of operation will ensure that successful communication is achieved.
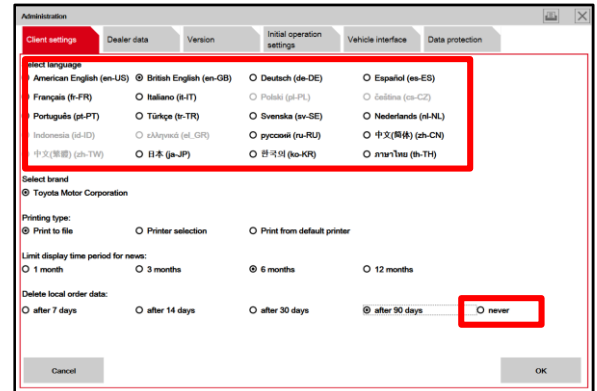
Figure 10.

1	LAN Port of the Techstream ADVi
2	OBD Port of the Vehicle

4. Configuration of the Toyota-ISTA language and logs.

   A. Select your preferred language.

   B. Set "Delete local order data" to "never."

Figure 11.

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Repair Procedure (continued)

ISTA Diagnostic Cable (continued)

5. Configuration of the Toyota-ISTA connection type.

    A. Select the vehicle interface tab.

    B. Ensure that "Dealer organization ICOM/ENET local area network" is selected.

    > **NOTICE**
    >
    > **Make sure the Supra diagnostic cable is ALWAYS used. Using a USB interface or ANY communication device other than the Supra diagnostic cable will result in slow communication speeds and could result in ECU damage.**

Figure 12.
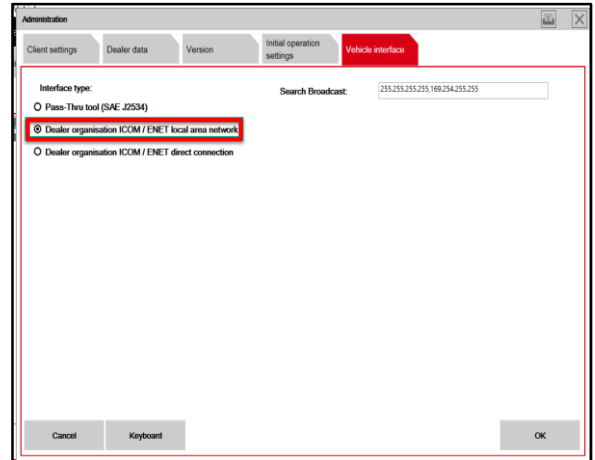
Vehicle Preparation

Activating PAD Mode on the Supra

In order to have communication between the tester and the on-board ECUs, the vehicle MUST be put into an energy mode similar to IG-ON with engine OFF. For the Supra, this mode is called PAD mode and it ensures that ALL ECUs receive energy in order to reply to requests of Toyota-ISTA.

> **NOTICE**
>
> **While the vehicle is in PAD mode, ALL energy monitoring logic will be disabled. The technician MUST utilize a battery charger to maintain sufficient current during ALL diagnosis and programming activities. If the battery charger is NOT connected, battery life will be affected and ECU damage could occur.**

How to activate PAD mode:

*   Do NOT depress the brake pedal.
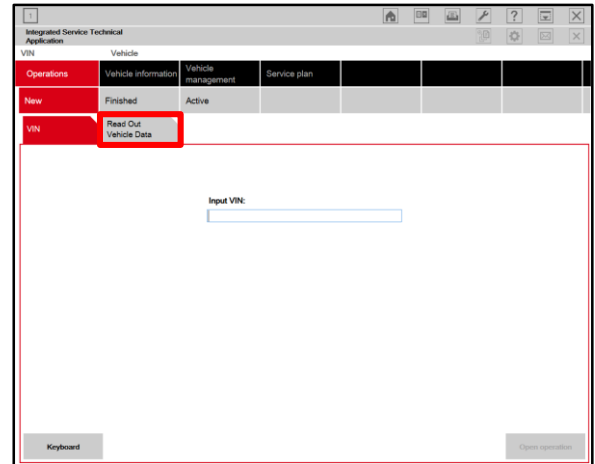*   Press the START button three times quickly.

Figure 13.
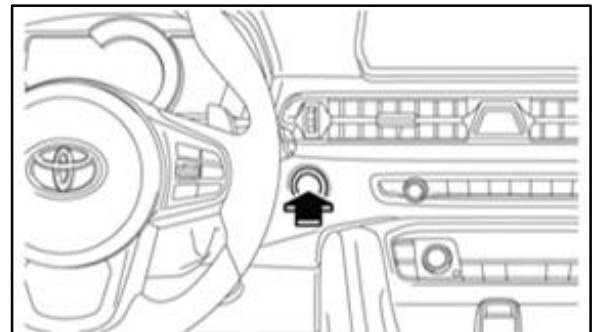
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Vehicle Preparation (continued)

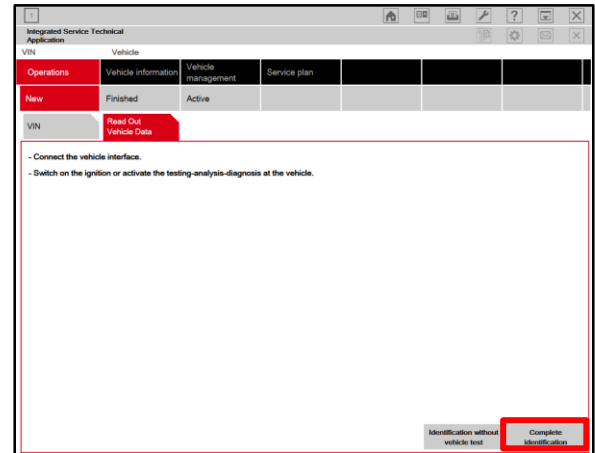### Launching Toyota-ISTA and Connecting to the Vehicle

1. Select operations tab (or "Cases" for American English).

2. Select read out vehicle data tab.

Figure 14.

3. Select "Complete identification."

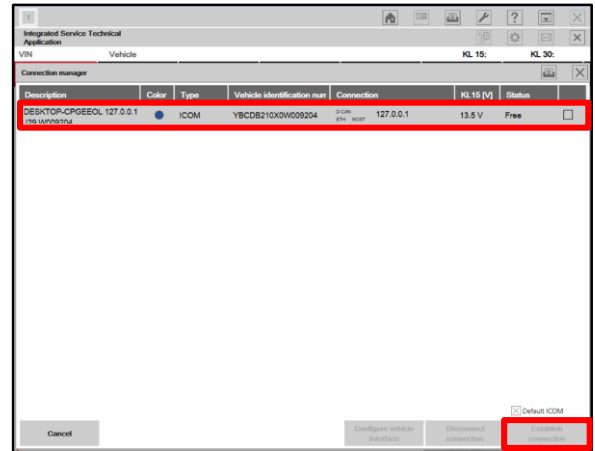**Figure 15.**

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Vehicle Preparation (continued)

Launching Toyota-ISTA and Connecting to the Vehicle (continued)

4. Select the gray bar indicating the VIN of the vehicle.

5. Select "Establish connection."

Figure 16.

6. The identification of ALL ECUs will start.

Figure 17.
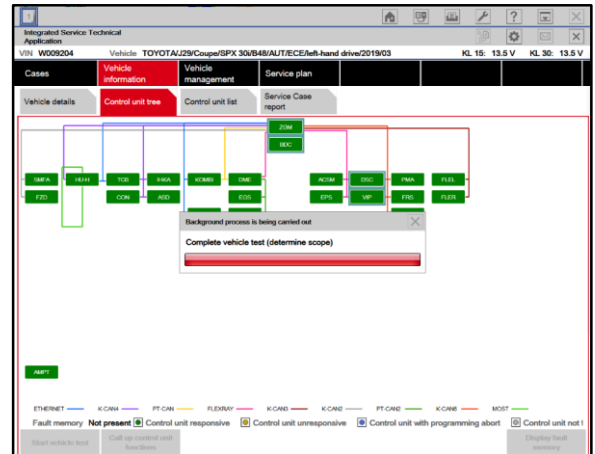
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Calculating the Reprogramming Plan

Unlike other Toyota vehicles that use Techstream and Calibration Update Wizard to perform single ECU updates, Toyota-ISTA will program ALL applicable ECUs during one service event.

The Supra software will be considered a global package, known as an Integration Level or I-Level. When a NEW software package is issued, it will be reflected in a numerically higher I-Level.

Toyota-ISTA will calculate the needed actions based on the difference between the current I-Level of the vehicle and the ISTA target I-Level. These measures will be calculated automatically by Toyota-ISTA.

> **NOTICE**
>
> **BEFORE proceeding further, ensure you have downloaded and installed the latest version of Toyota-ISTA from TIS. The calibration and reprogramming information is stored locally within Toyota-ISTA. <u>Attempting to reprogram a vehicle with an outdated version of ISTA may lead to an incomplete repair</u>.**

1. Select service plan tab.

2. Select programming plan tab.

3. Allow the calculation to complete; this may take 3–5 minutes.

Figure 18.
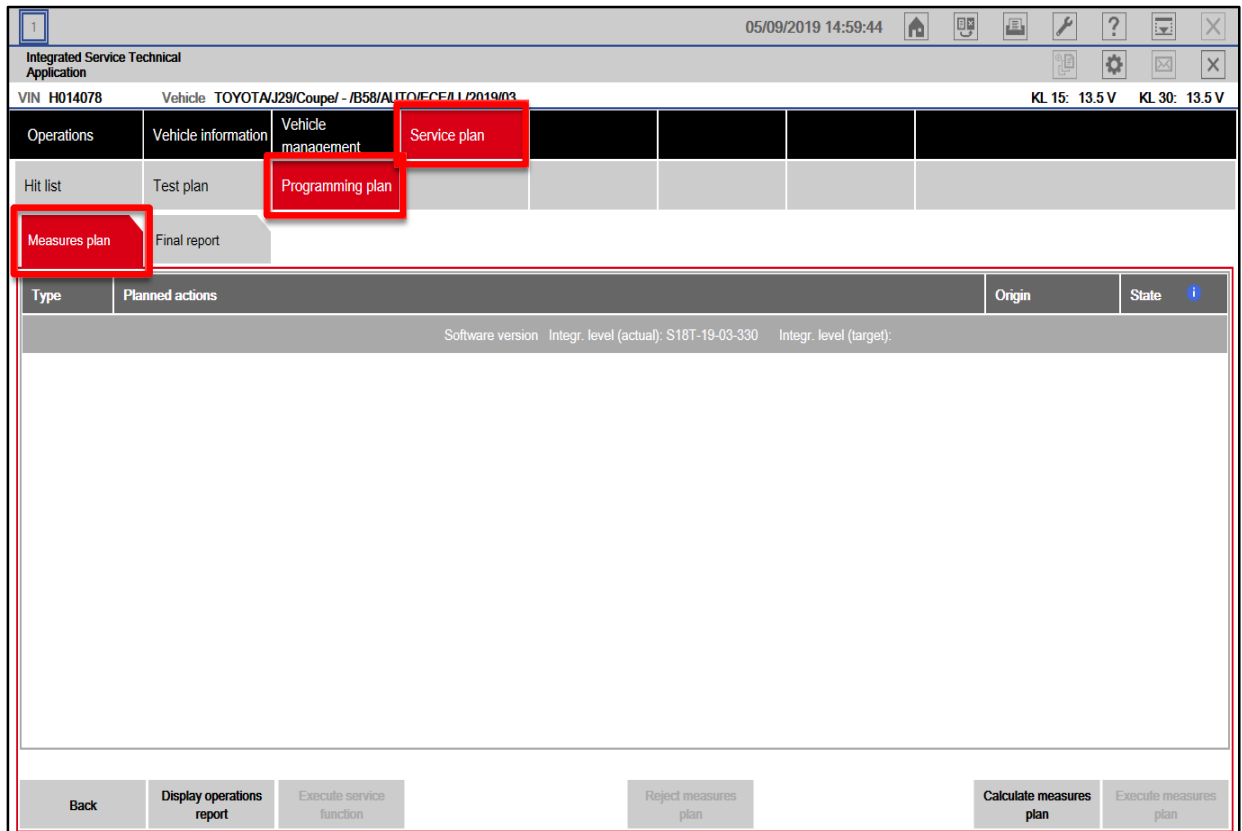
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Calculating the Reprogramming Plan (continued)

AFTER the action plan has been calculated, the following screen will be displayed. This will list ALL necessary actions to transition from the Current I-Level to the Target I-Level.

> **NOTICE**
>
> **At this screen, it is still possible to select Back, which will exit the action plan and no programming will be completed. If there is no need to program the vehicle, use this opportunity to exit the action plan. AFTER selecting Perform Action Plan, there will be no further opportunity to exit the programming session. Once the programming session begins, time MUST be allowed for Toyota-ISTA to complete ALL operations. Exiting the action plan during a programming session will result in DTCs and ECU damage. After starting the action plan, do NOT interrupt the session.**

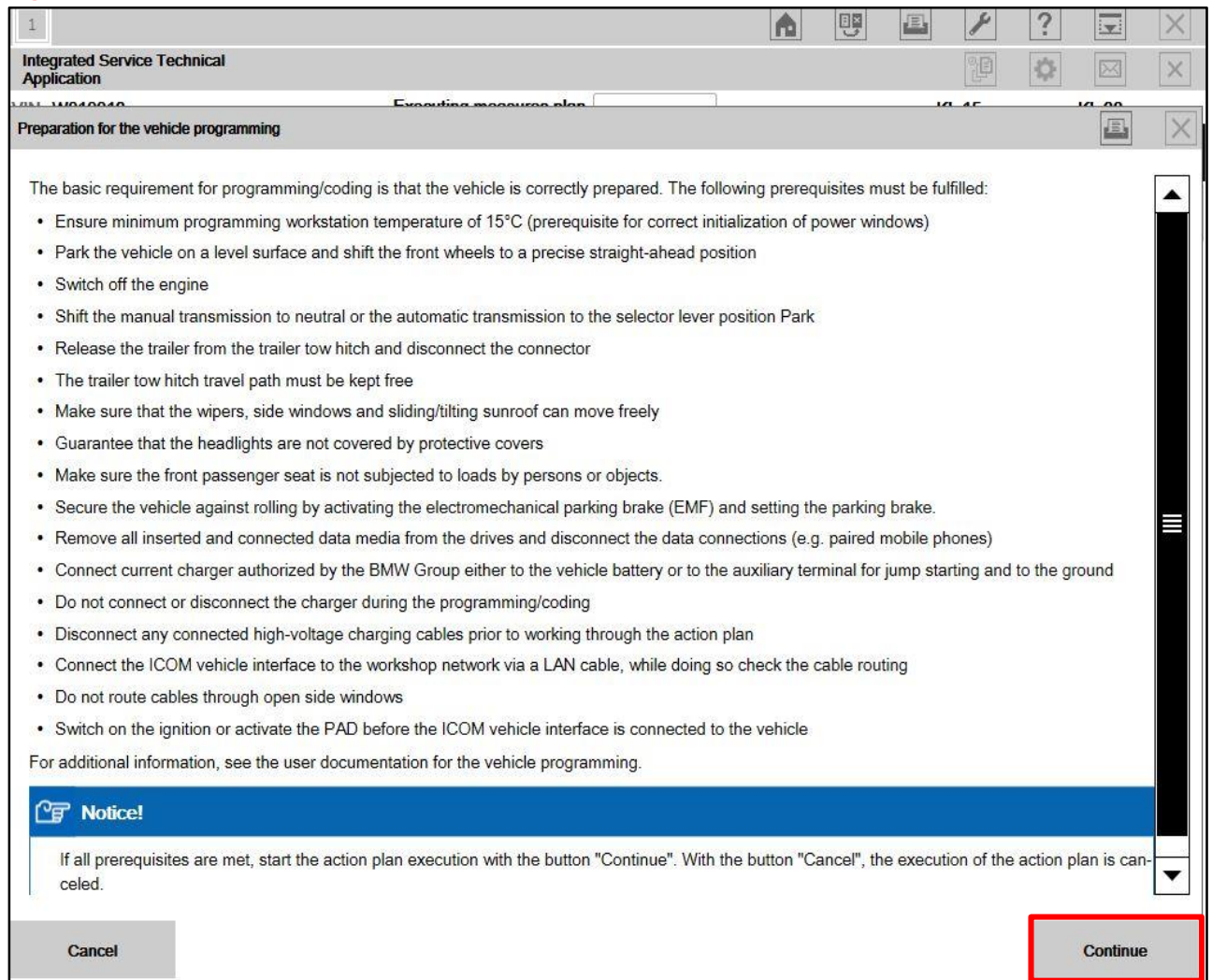**Figure 19.**
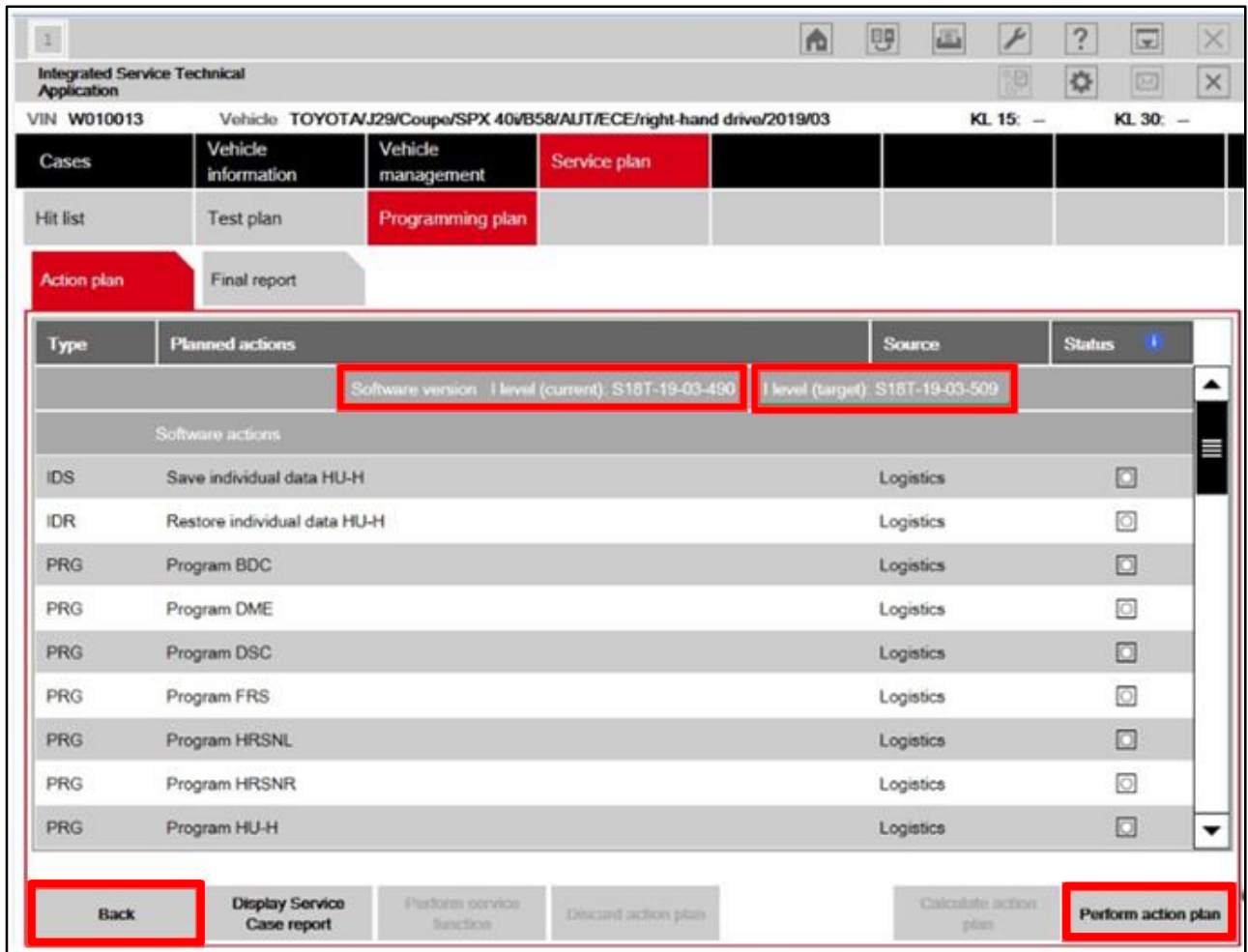
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Vehicle Preparations

The following screen will be displayed. Please review each condition and ensure that it has been met BEFORE pressing the Continue button.

> **NOTE**
>
> Ensure a minimum programming workstation temperature of 59°F.

Figure 20.

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During Programming

While the reprogramming session is active, Toyota-ISTA will display the approximate time remaining until complete. The time may vary from vehicle to vehicle, based on many factors such as date of last programming and amount of ECU updates required.

Toyota-ISTA will also attempt to save personalization or individualization data from each ECU in order to maximize customer satisfaction.

As each step is completed, Toyota-ISTA will update the status with a green check mark.

**Figure 21.**

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Vehicle Initializations

AFTER reprogramming has completed, Toyota-ISTA may request additional functions to complete. These additional functions may include initialization of seats, windows, mirrors, or headlights.

Toyota-ISTA may provide instructions such as ensuring there are no obstructions of the object that requires initialization. Please follow ALL necessary on-screen prompts and ensure that the vehicle is parked in a safe manner to complete each initialization.

If these directions are NOT followed properly, the vehicle could produce additional DTCs.

Figure 22.
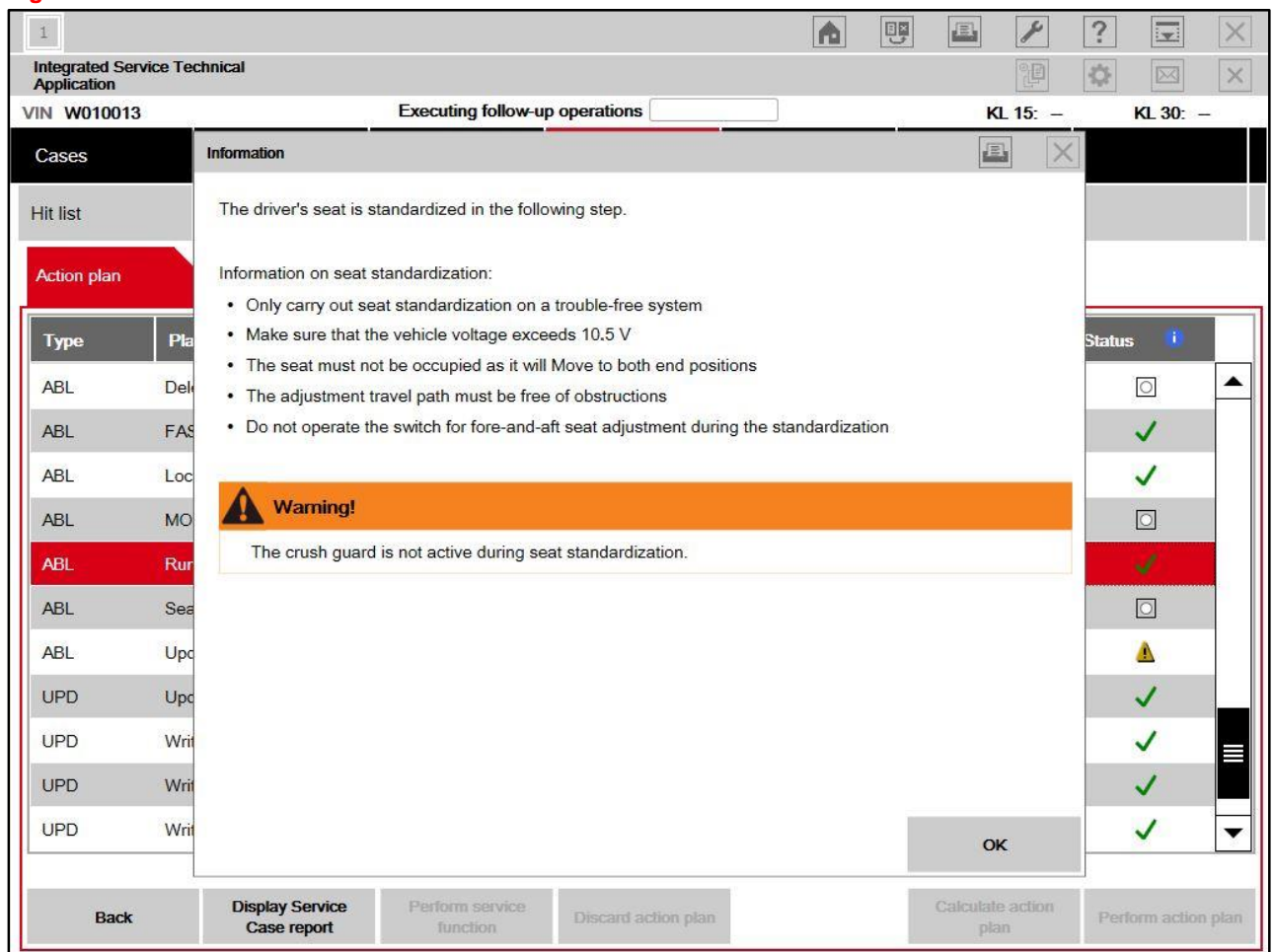
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Final Report

AFTER the measures plan has completed, Toyota-ISTA will automatically display the Final Report. The Final Report will list ALL actions that have been completed and the status. **AFTER the Final Report is displayed, the reprogramming is complete.**

You may return to vehicle diagnostics by clicking the vehicle management tab.

Figure 23.