UPS F59 Image Processing Module (IPM) (Camera) Alignment

8/15/23

Job Requirements

- Ford software: IDS (2000 – 2022 model years), FDRS (2023 & newer model years)
- Ford VCM adapter
- 7mm or 9/32in combination wrench
- 7mm or 9/32in socket and wrench
- Inclinometer
- Up to 15 min road test above 40 MPH on straight road with highly visible lane markers. Average time is 5 minutes.
  - OK to stop vehicle during calibration process just don't turn ignition key off until completed.
  - OK if road is not straight and turns made during calibration
- Parts for reference

DESCRIPTION	SERVICE PART # (Part # to order)	ENGINEERING PART # (Part # on part)
Camera - Image Processing Module (IPM) **NOTE: Requires Ford IDS/FDRS tool for replacement**	2020-2022: LU9Z-19H406-A 2023: PU9Z 19H406 A	2020-2022: LU9T 19H406 CC 2023: PU9T 19H406 CB
Camera (IPM) heater jumper harness	LU9Z-14A411-C	LU9T 14C210 AA
Camera (IPM) windshield mounting assembly (glareshield, heater & adhesive)	Utilimaster: LU9Z-18A456-D Morgan Olson: LU9Z-18A456-E	Utilimaster: LU9T 18A456 AB Morgan Olson: LU9T 18A456 BB
Camera (IPM) windshield mounting heater adhesive strip	LU9Z-14D696-A	LU9T 18D695 AB
Camera (IPM) windshield mounting supplemental adhesive strip (2 required)	MU9Z-19E523-A	MU9T 80A213 CA

Steps

1. Address all non- IPM related fault codes
2. If a new IPM is being installed, perform:
   - As-Built programming on it w/ IDS (2000 – 2022 model years)
   - Configuration on it w/ FDRS (2023 & newer model years)
3. Ensure proper camera mounting to windshield
4. Adjust camera to proper angle
5. Perform road test alignment using Ford software: IDS (2000 – 2022 model years), FDRS (2023 & newer model years) and Ford VCM adapter

Step 3. Ensure Proper Camera Mounting to Windshield

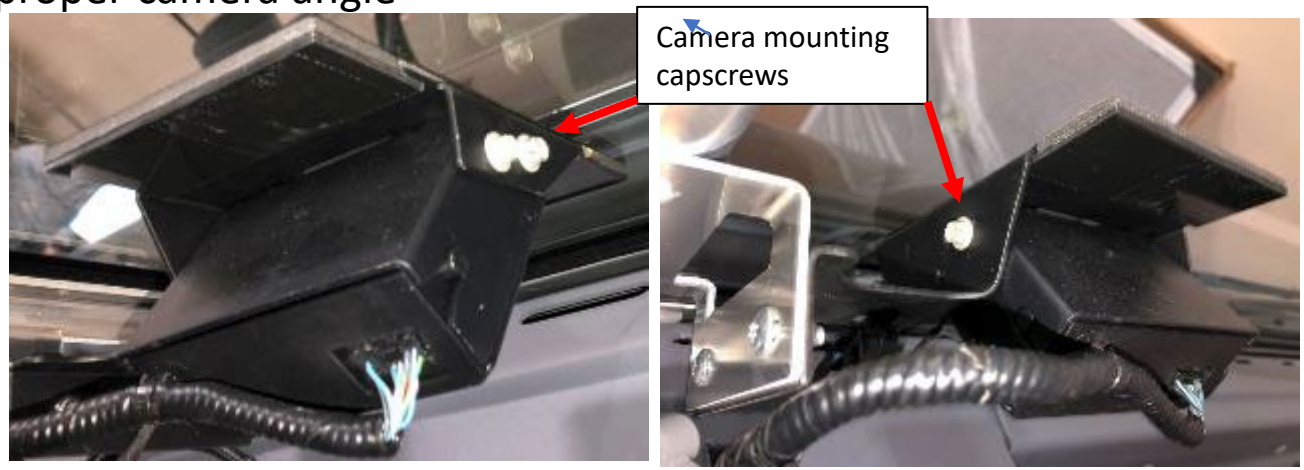
1. Check for 80 – 100% “wetout” of glareshield (camera mounting bracket) and supplemental adhesive strips (top and bottom) to windshield
2. If < 80% can not be achieved refer to separate instructions to remove and replace the camera glareshield and supplemental adhesive strips

Supplemental Adhesive Strips

Glareshield

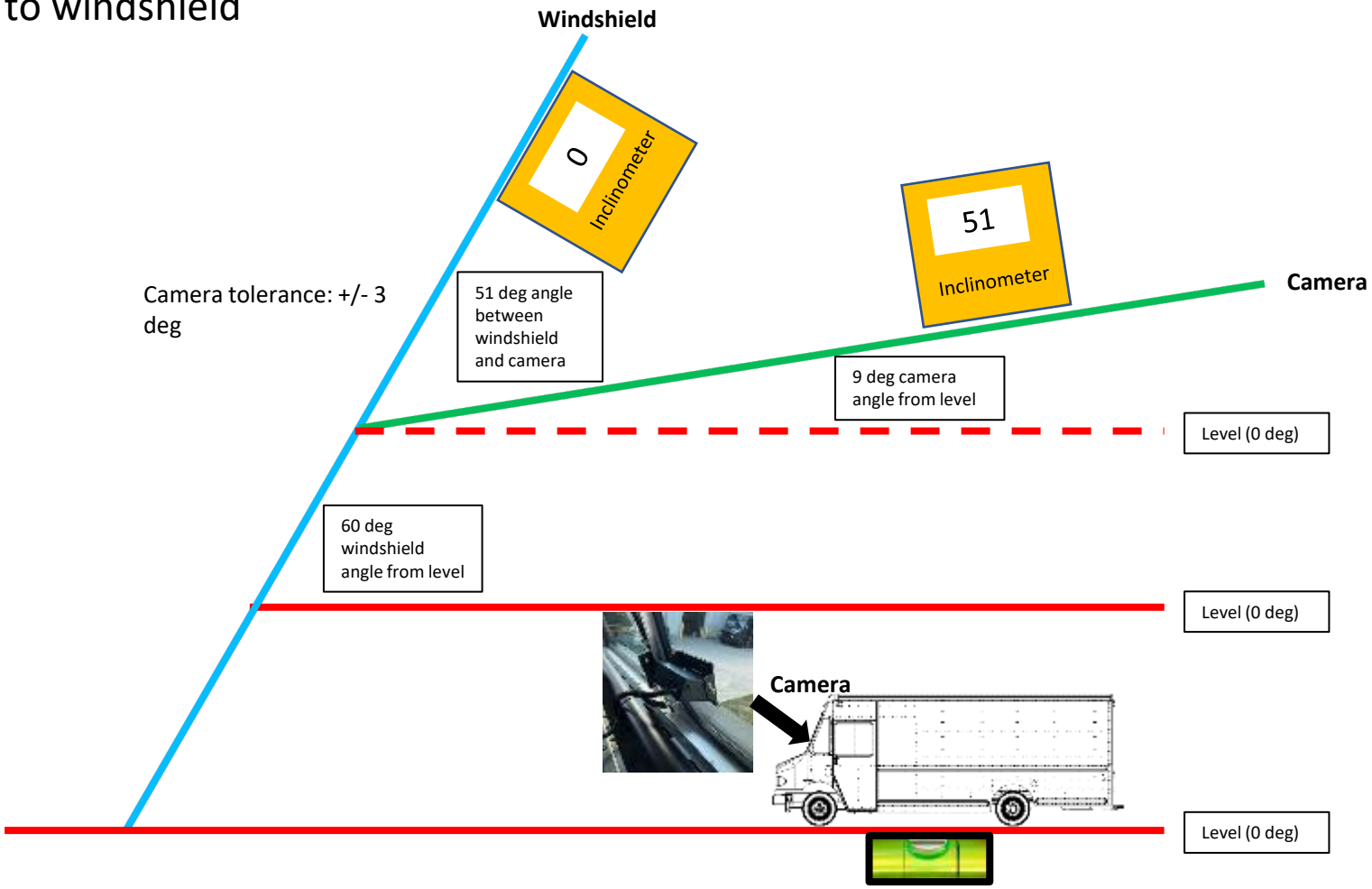
Step 4. IPM (Camera) Angle Adjustment

1. Loosen camera mounting capscrews slightly so camera can be moved when manipulated: 1 on driver's side and 2 on passenger side as shown
2. Place inclinometer on top of camera as shown and manipulate camera until proper inclinometer angle indicated. Refer to the following camera angle slides for proper adjustment setting
3. Tighten mounting screws to 57 in-lb (5 ft-lb) and recheck to confirm proper camera angle



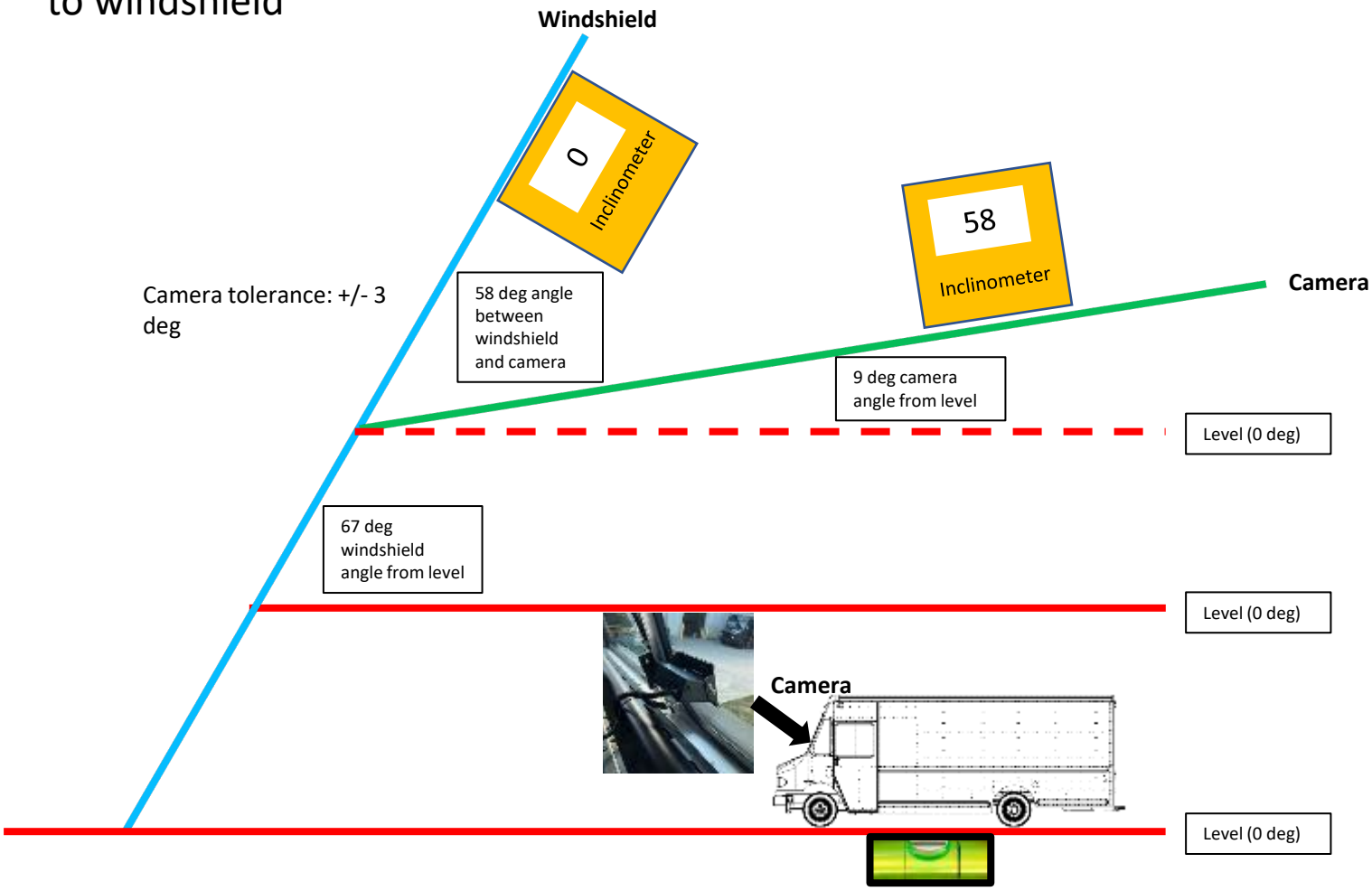
Utilimaster F59 Camera Angle (60 degree windshield angle)

- After zeroing inclinometer to windshield, proper inclinometer reading for camera shown below
- Vehicle does not have to be on level ground when using inclinometer zeroed to windshield



Morgan Olson F59 Camera Angle (67 degree windshield angle)

- After zeroing inclinometer to windshield, proper inclinometer reading for camera shown below
- Vehicle does not have to be on level ground when using inclinometer zeroed to windshield

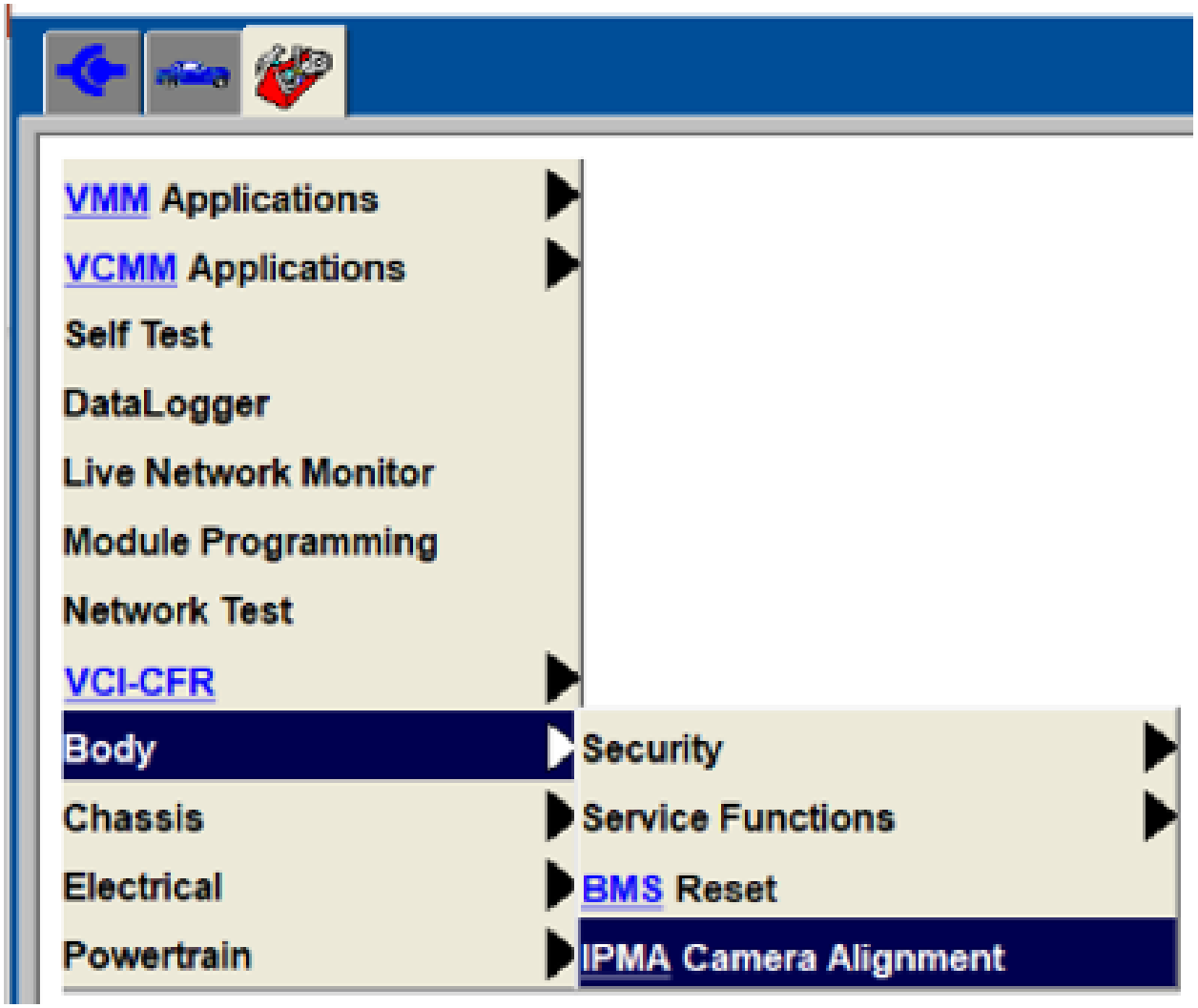


Ford IDS software (2000 – 2022 model years)

See next section for FDRS instructions

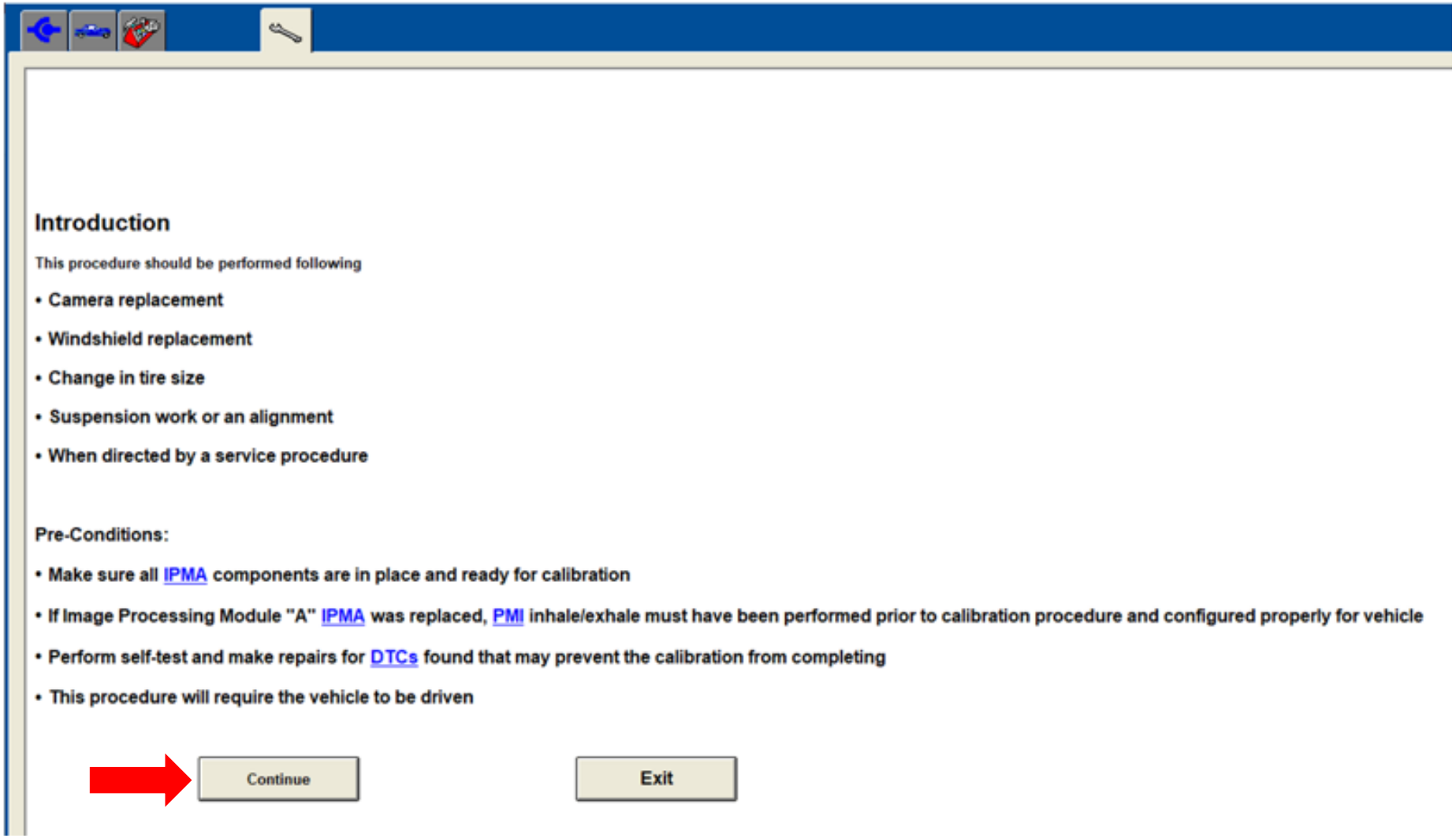
Step 6. Perform alignment using Ford IDS software and VCM adapter

- Connect Ford IDS and launch IPM alignment as shown below



Step 6. Perform alignment using Ford IDS software and VCM adapter

- Follow instructions on IDS to proceed with alignment



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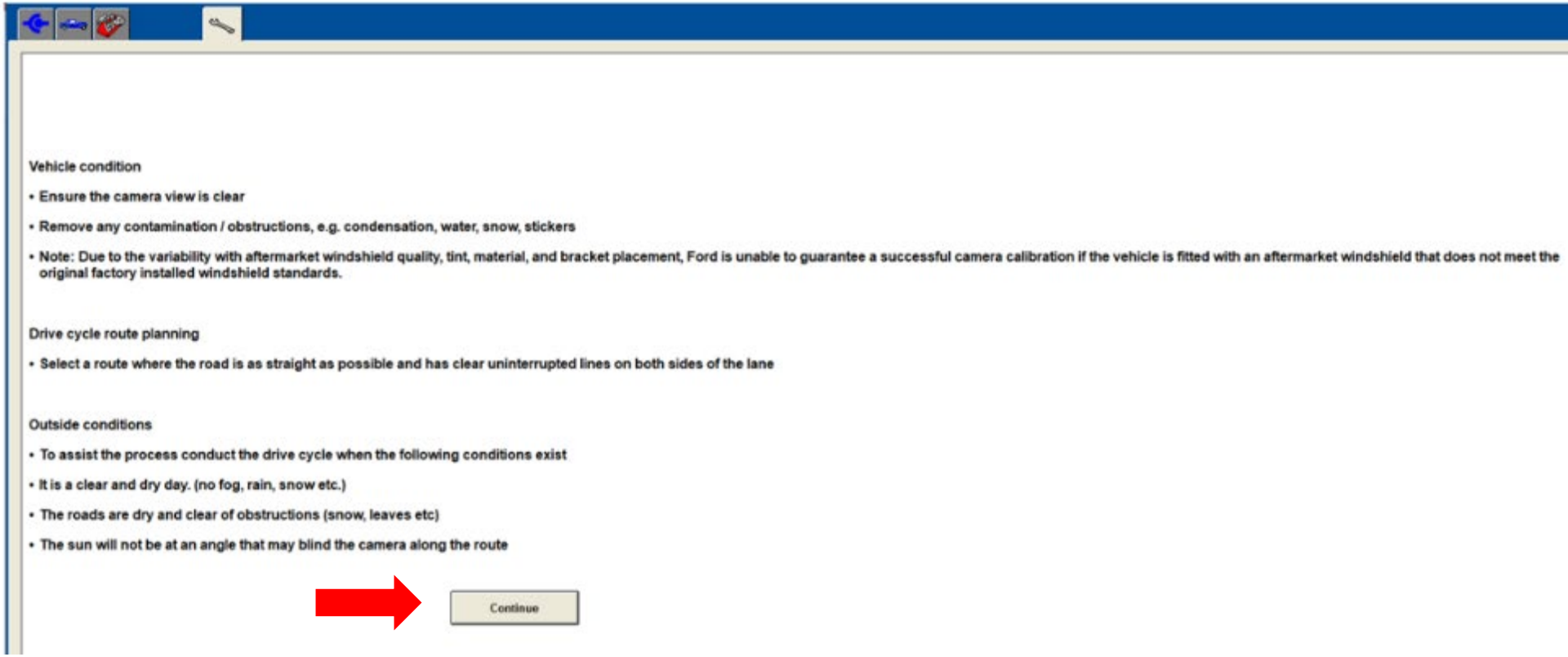

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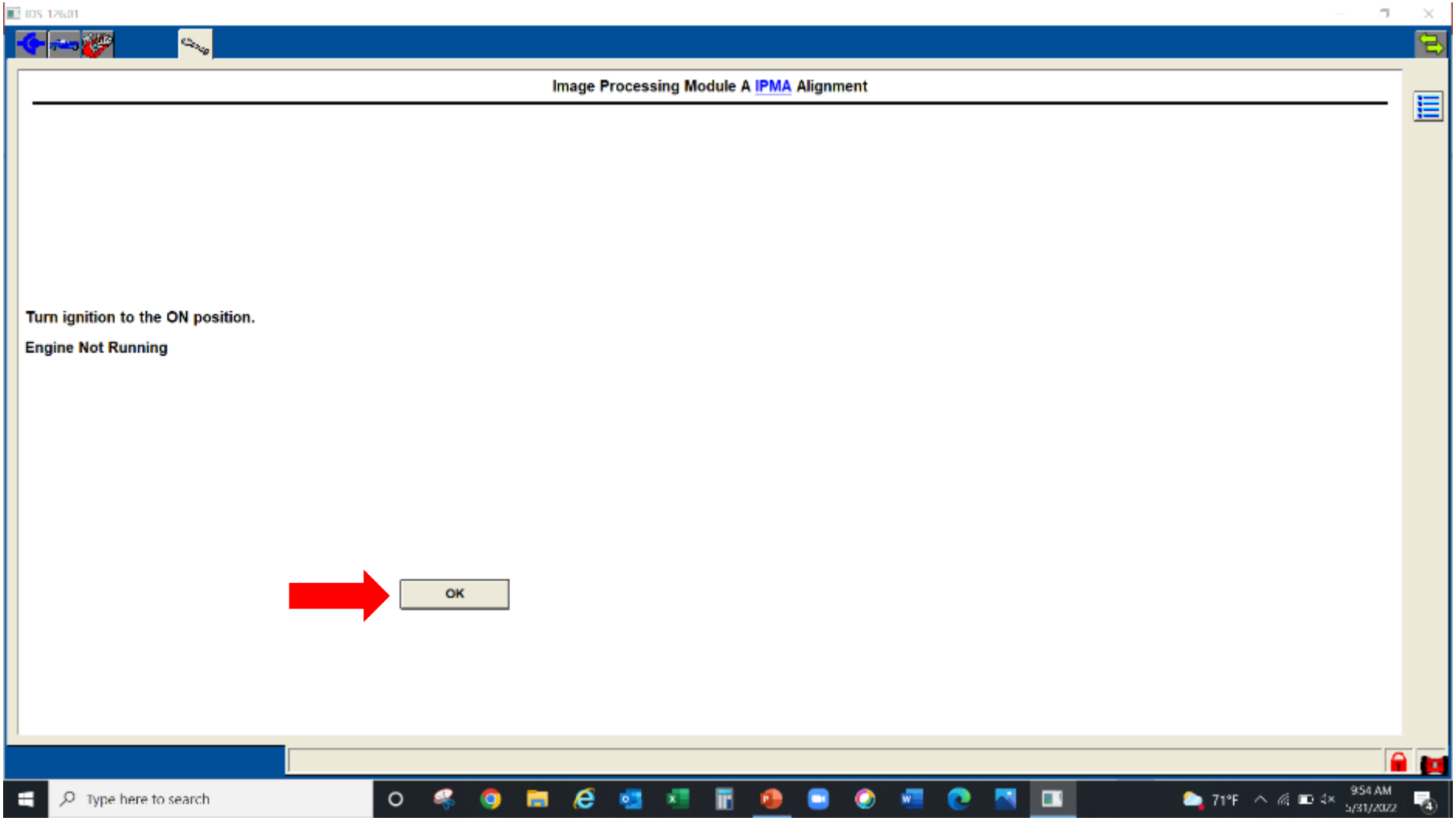
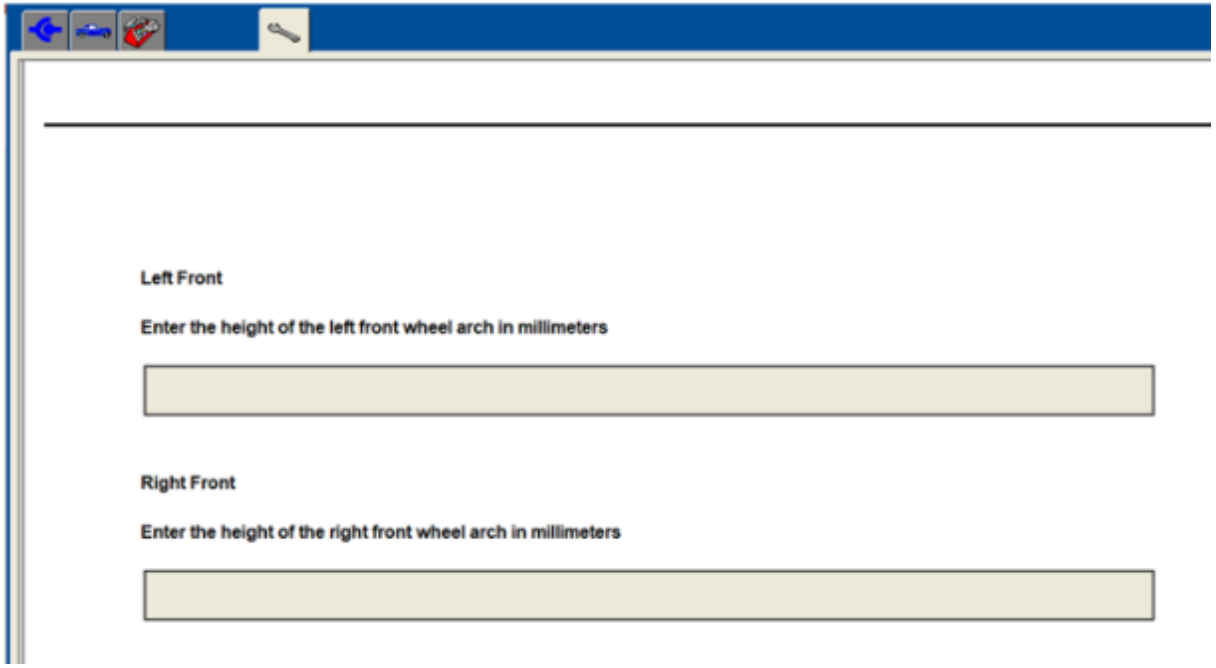
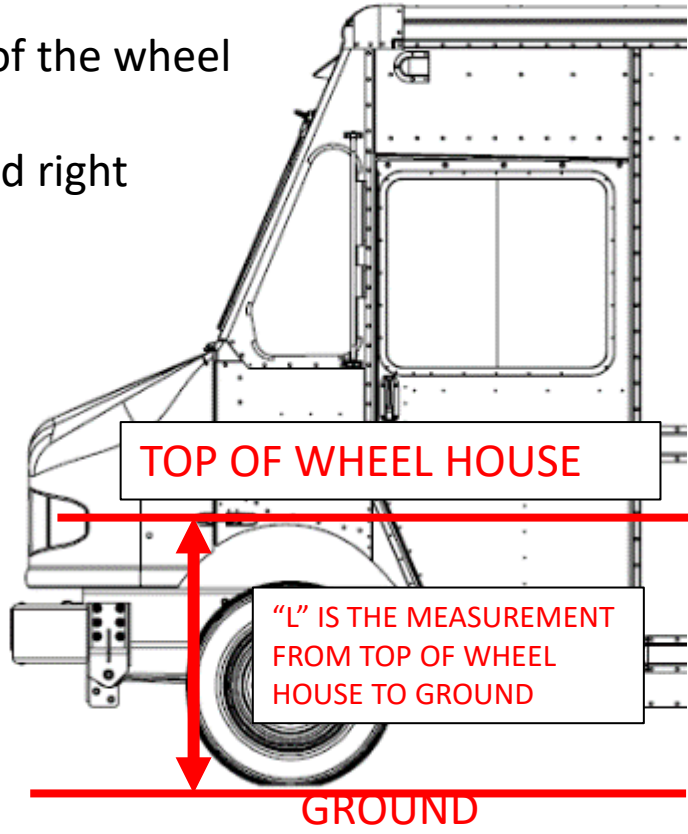


IPM **alignment** – Wheel Arch Heights

If wheel arch heights are already programmed they will be listed.
Measure to confirm they are correct.

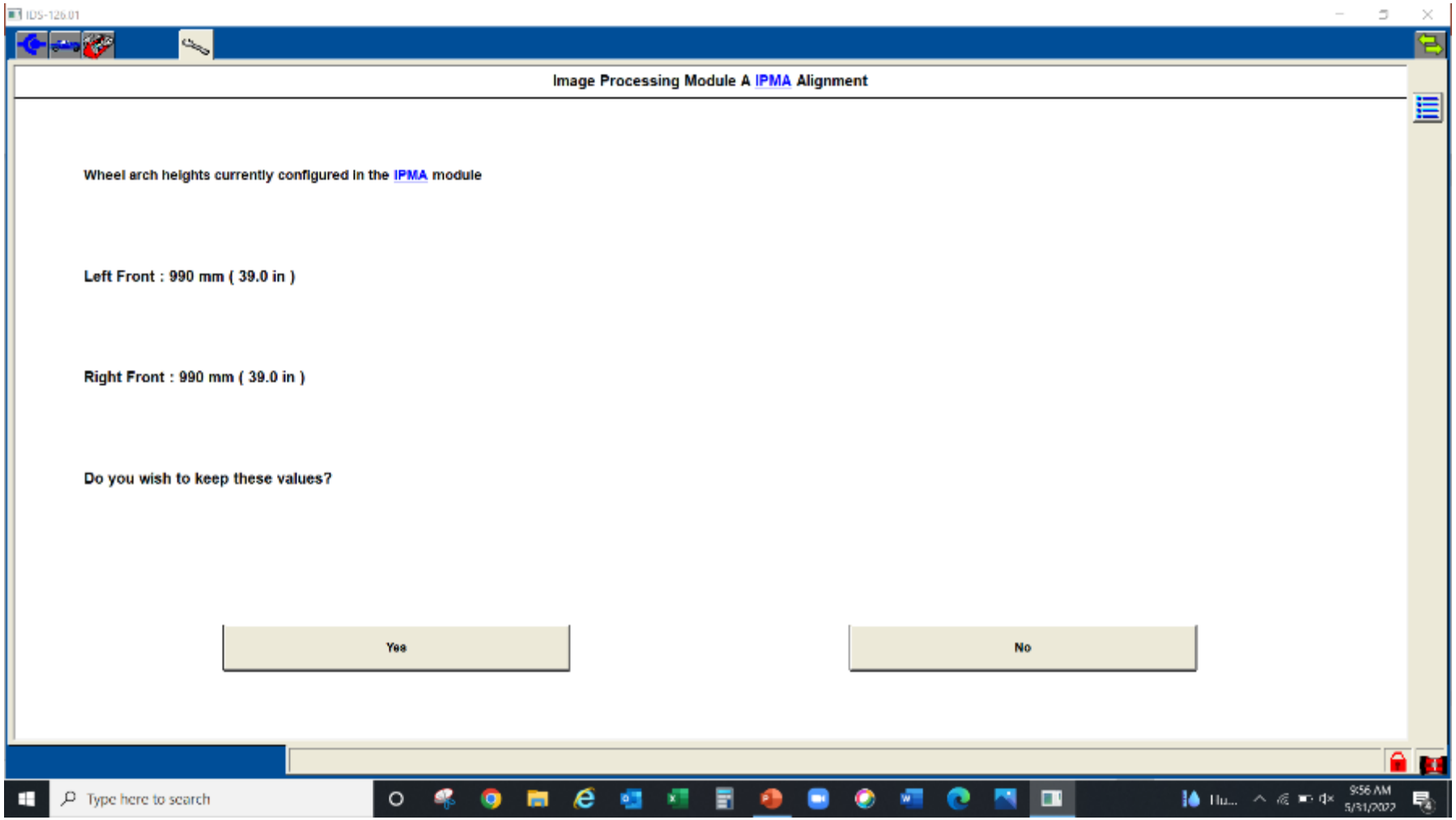
1. Heights are measured from the ground to the top of the wheel house.
2. Both wheel wells need to be measured. The left and right values need to be placed in the tool ***in millimeters***





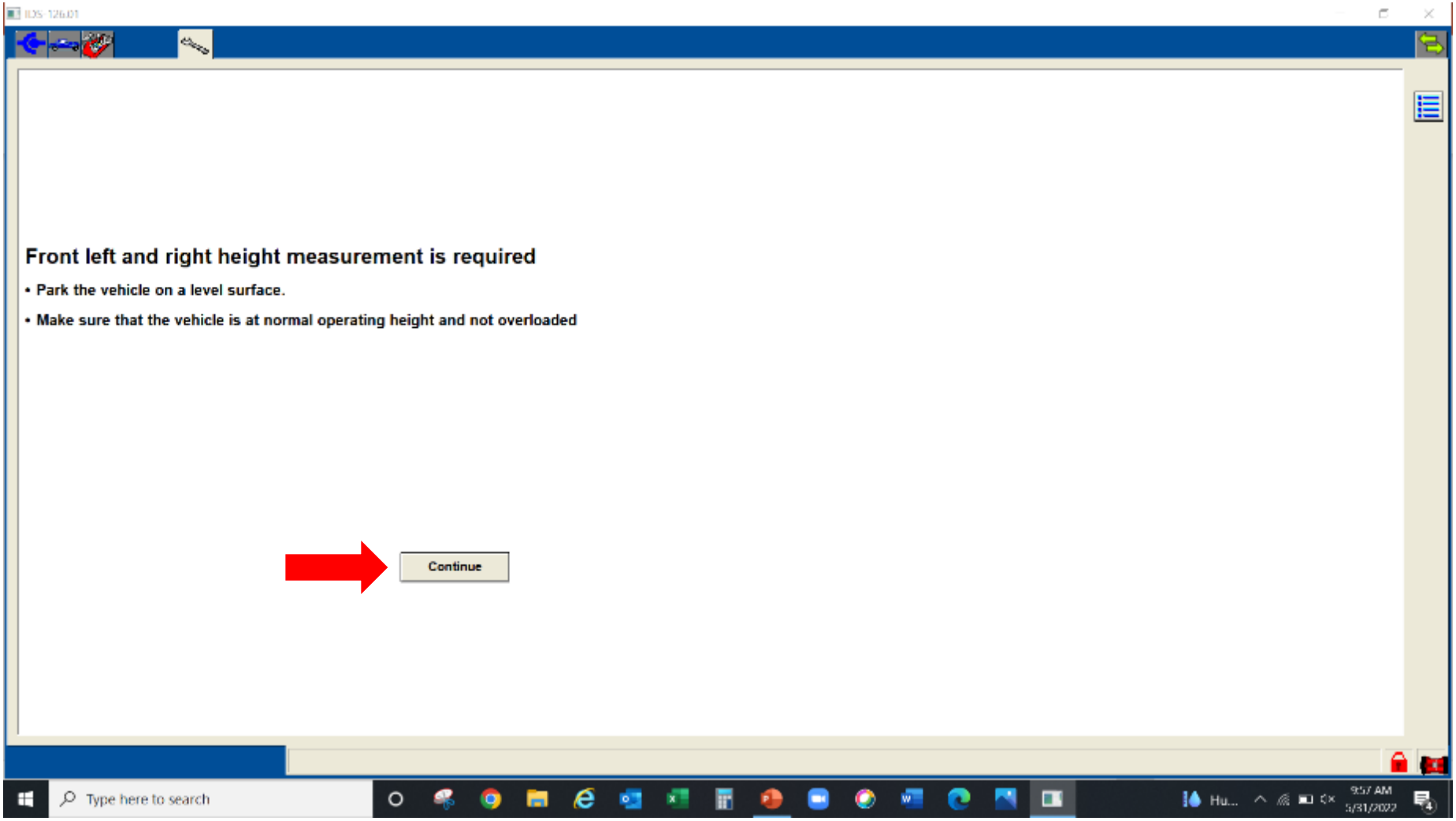
IPM **alignment** – Wheel Arch Heights

- If wheel arch heights are already programmed they will be listed as shown. Measure to confirm they are correct.



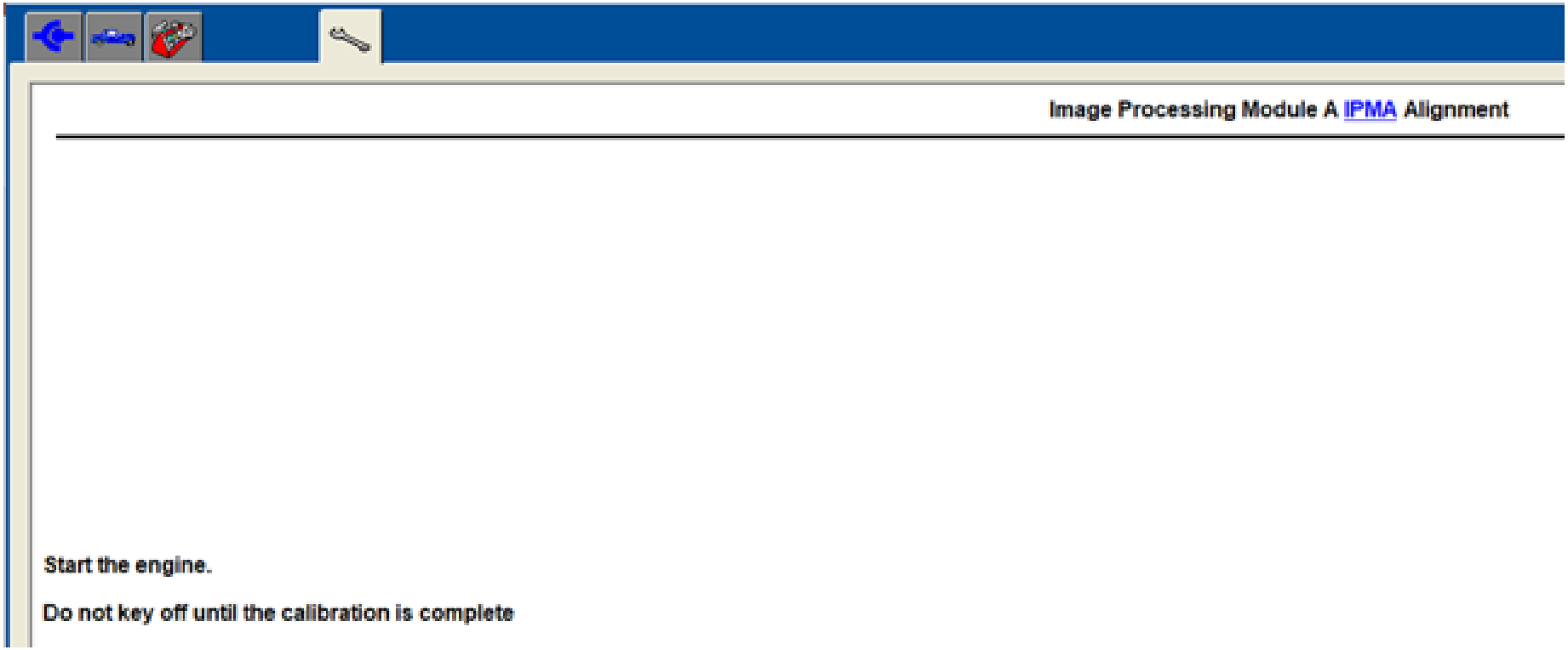
IPM **alignment** – Wheel Arch Heights

- If wheel arch heights are not already programmed, the screen below will be shown.



Step 6. Perform alignment using Ford IDS software and VCM adapter

- Follow instructions on IDS to proceed with alignment



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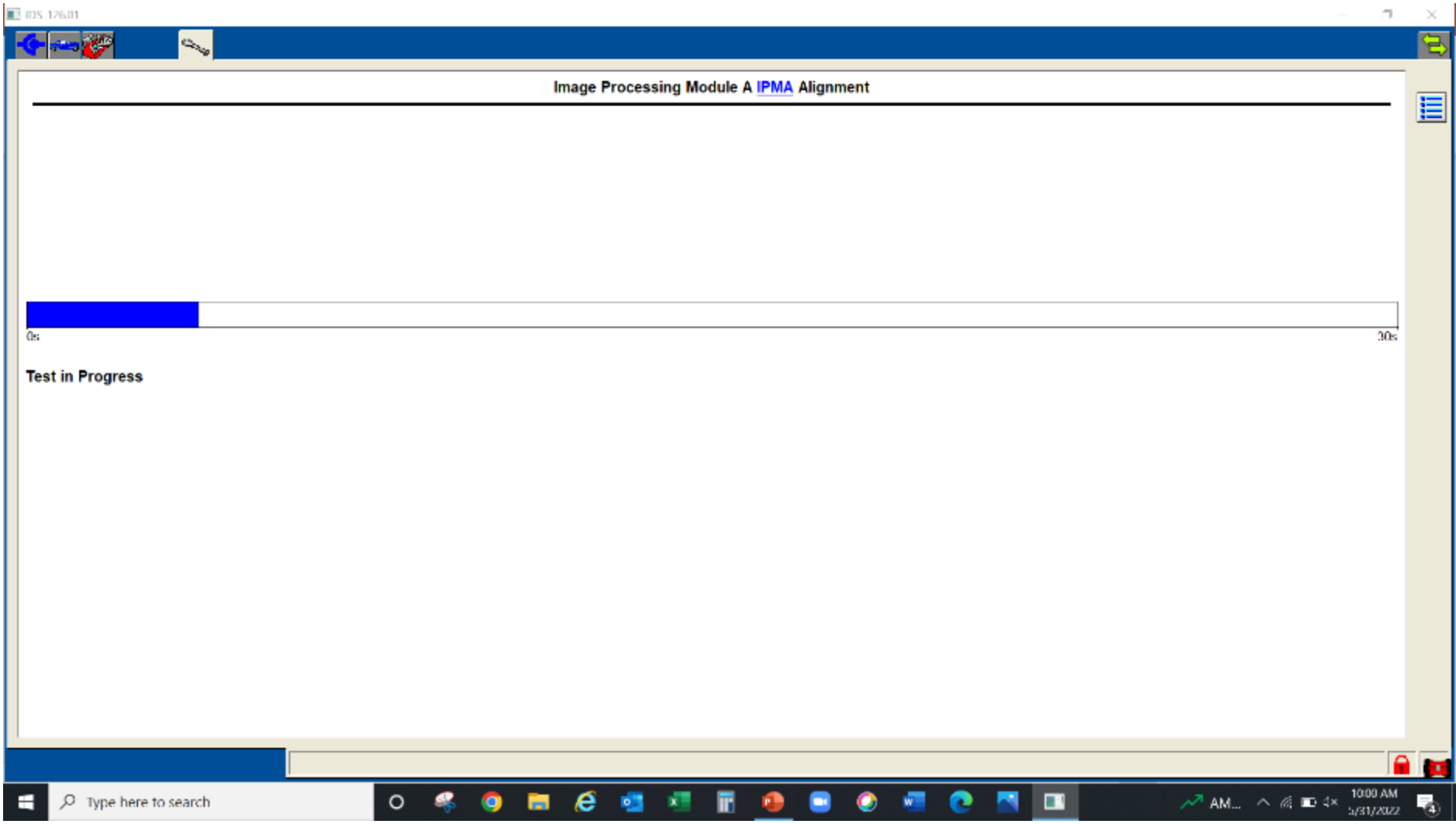

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- Up to 15 min road test above 40 MPH on straight road with highly visible lane markers. Average time is 5 minutes.
  - OK to stop vehicle during calibration process just don't turn ignition key off until completed.
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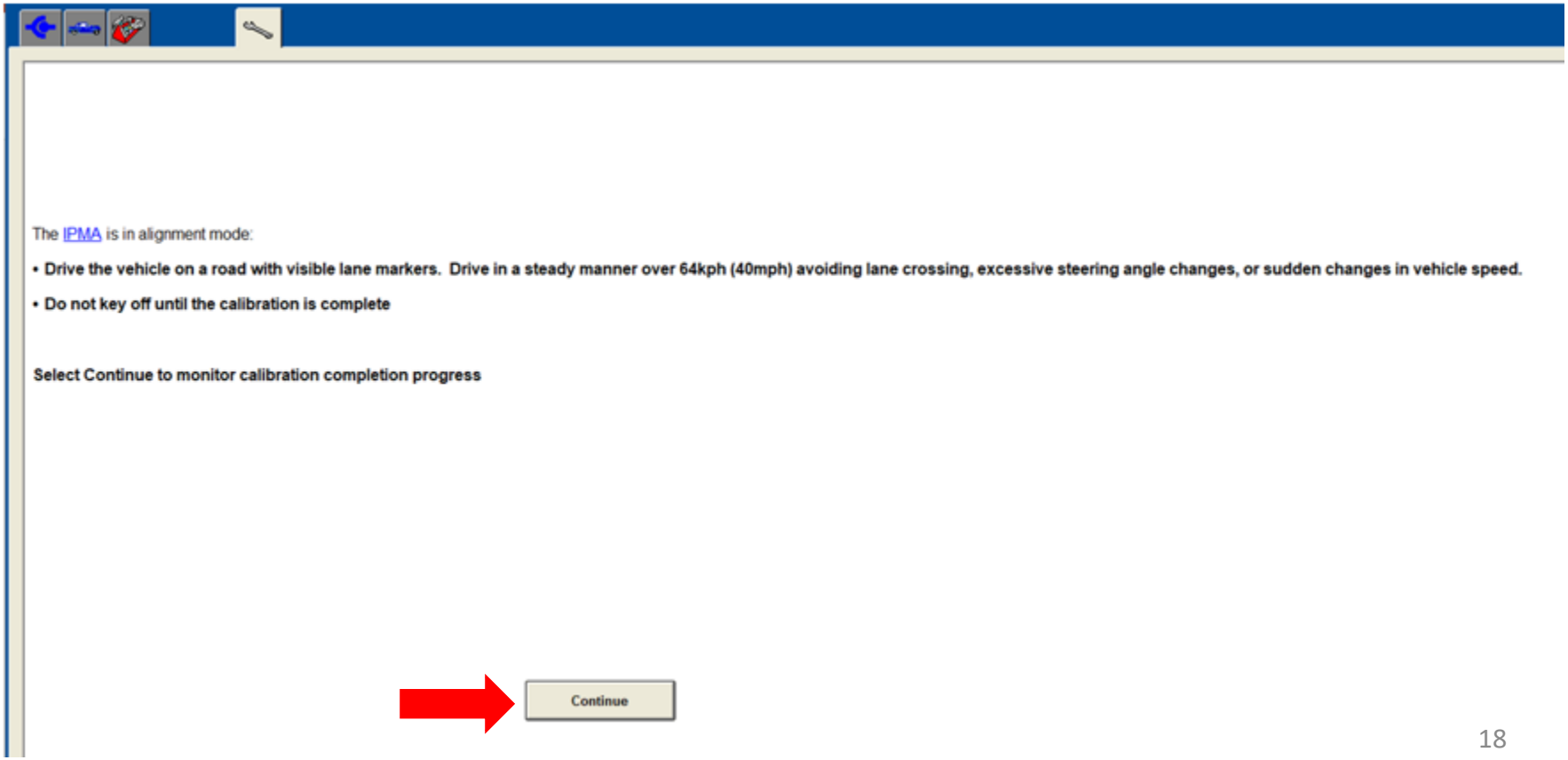

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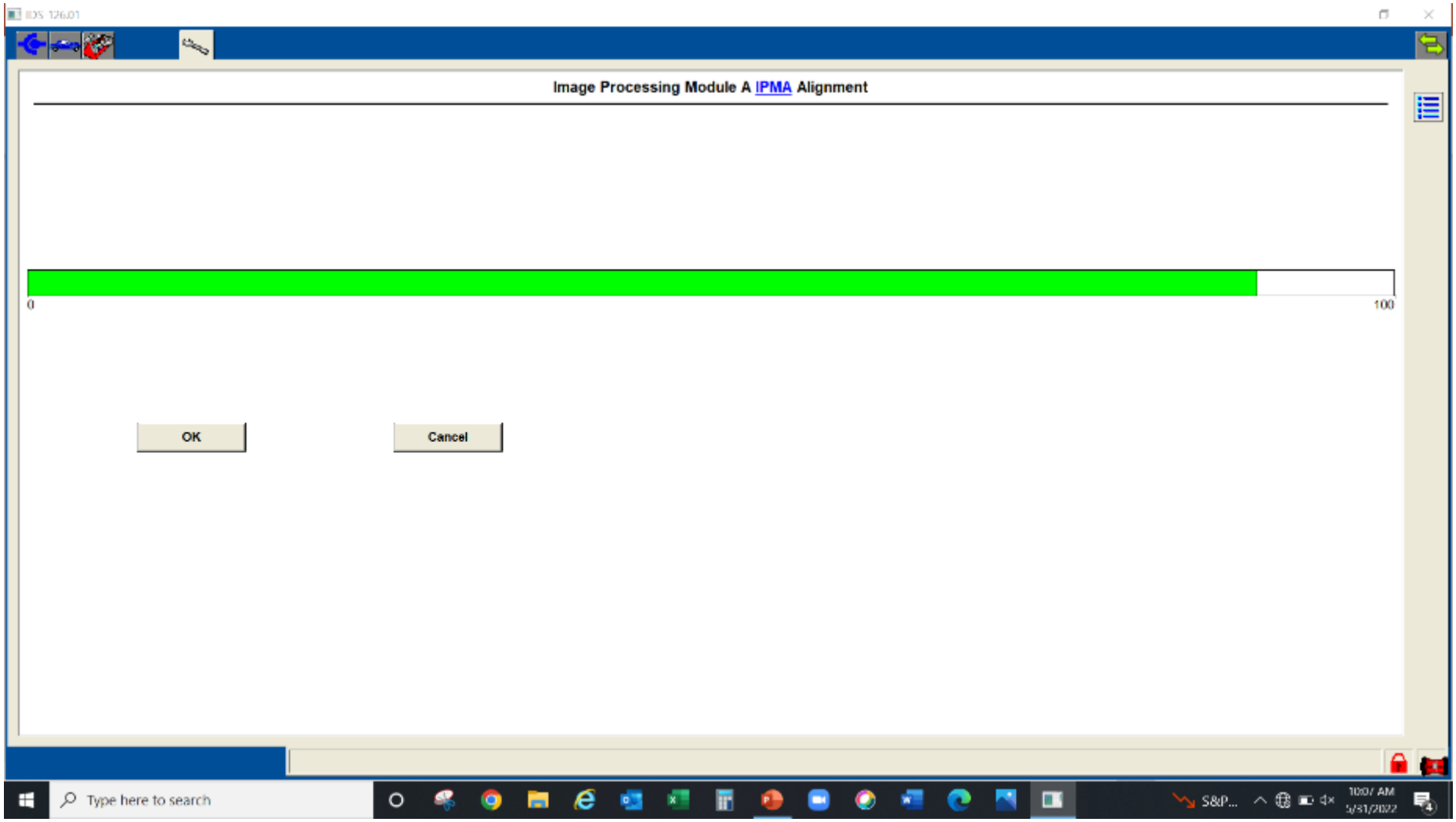

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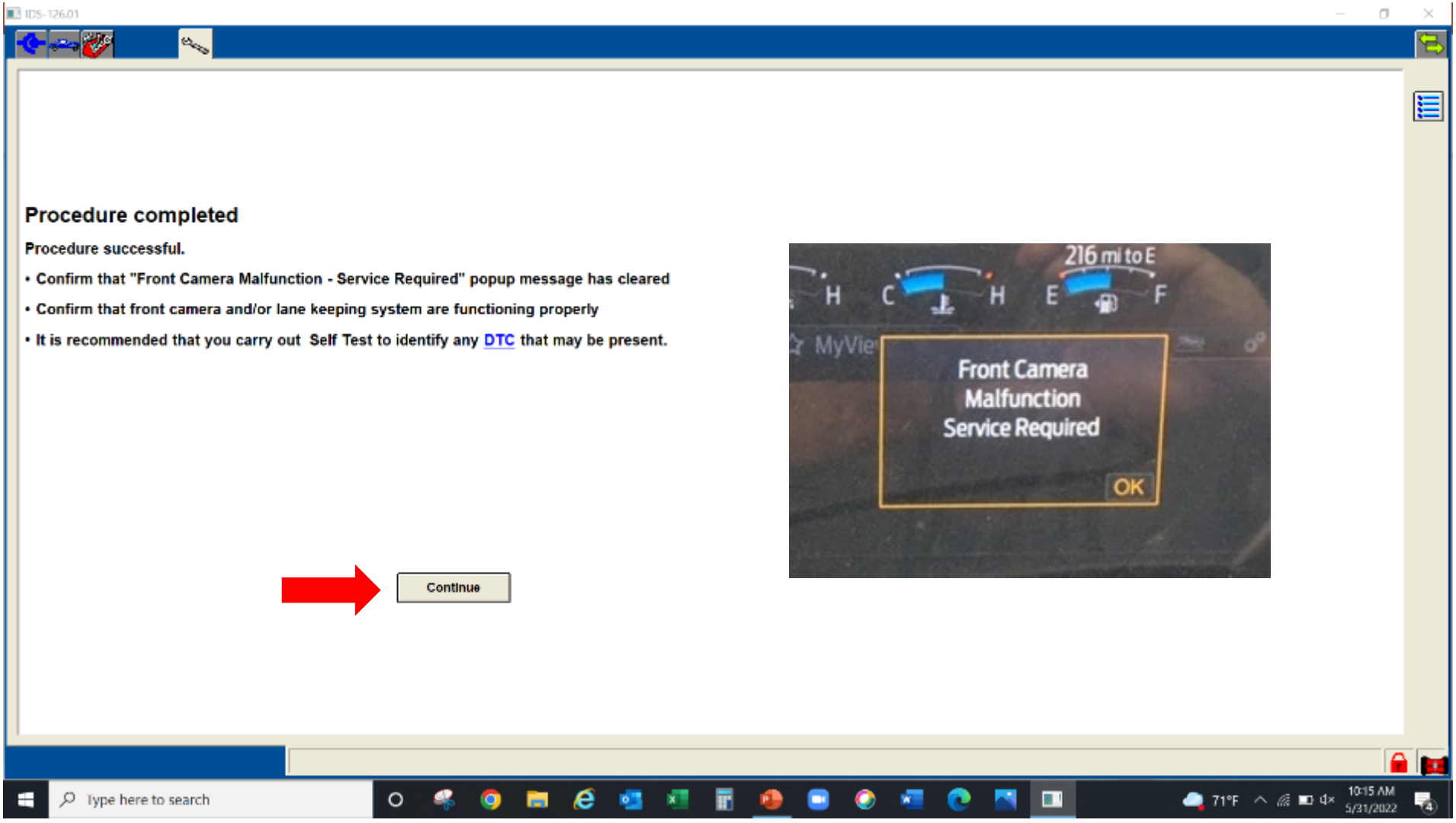
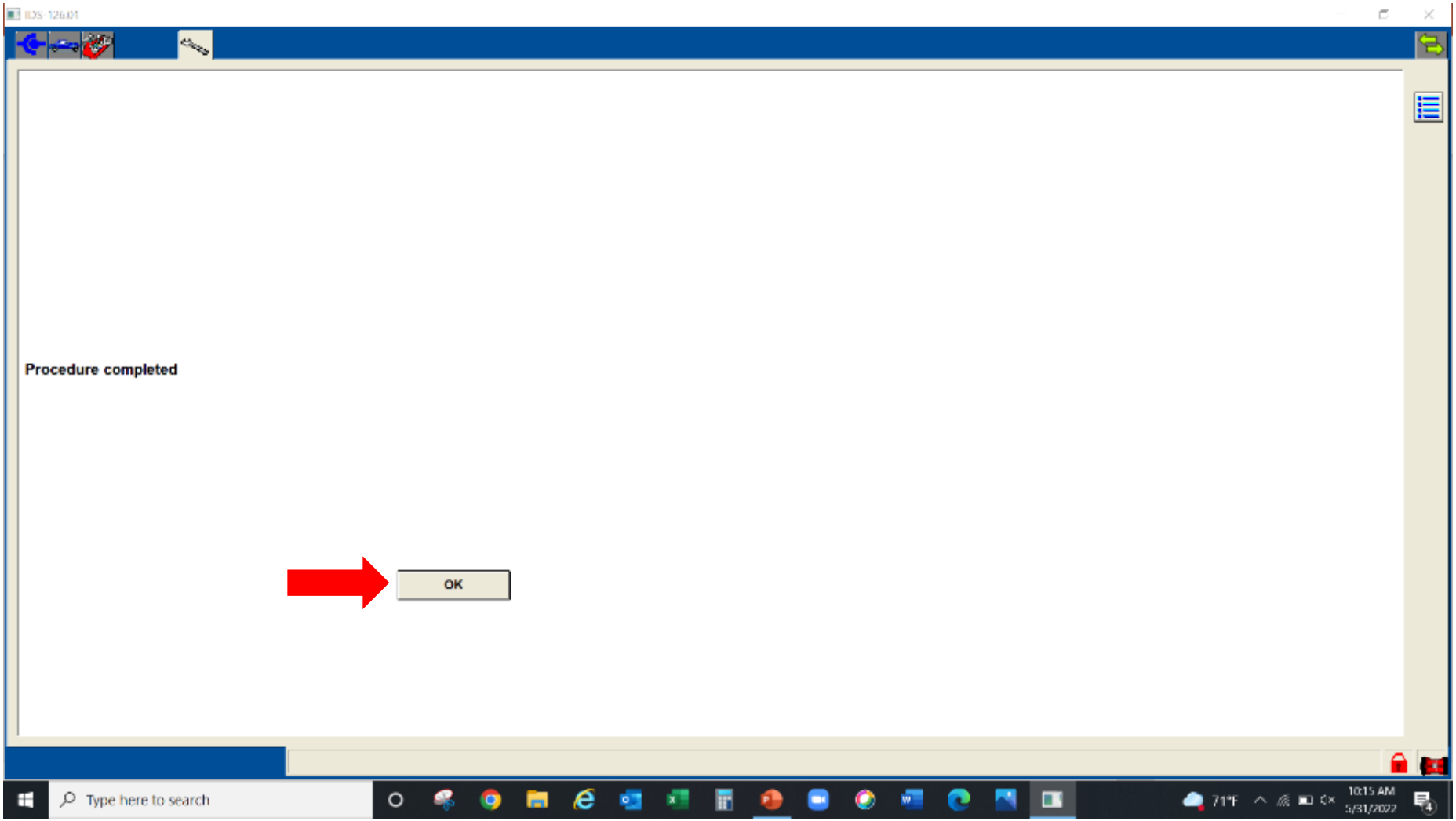


Step 6. Perform alignment using Ford IDS software and VCM adapter

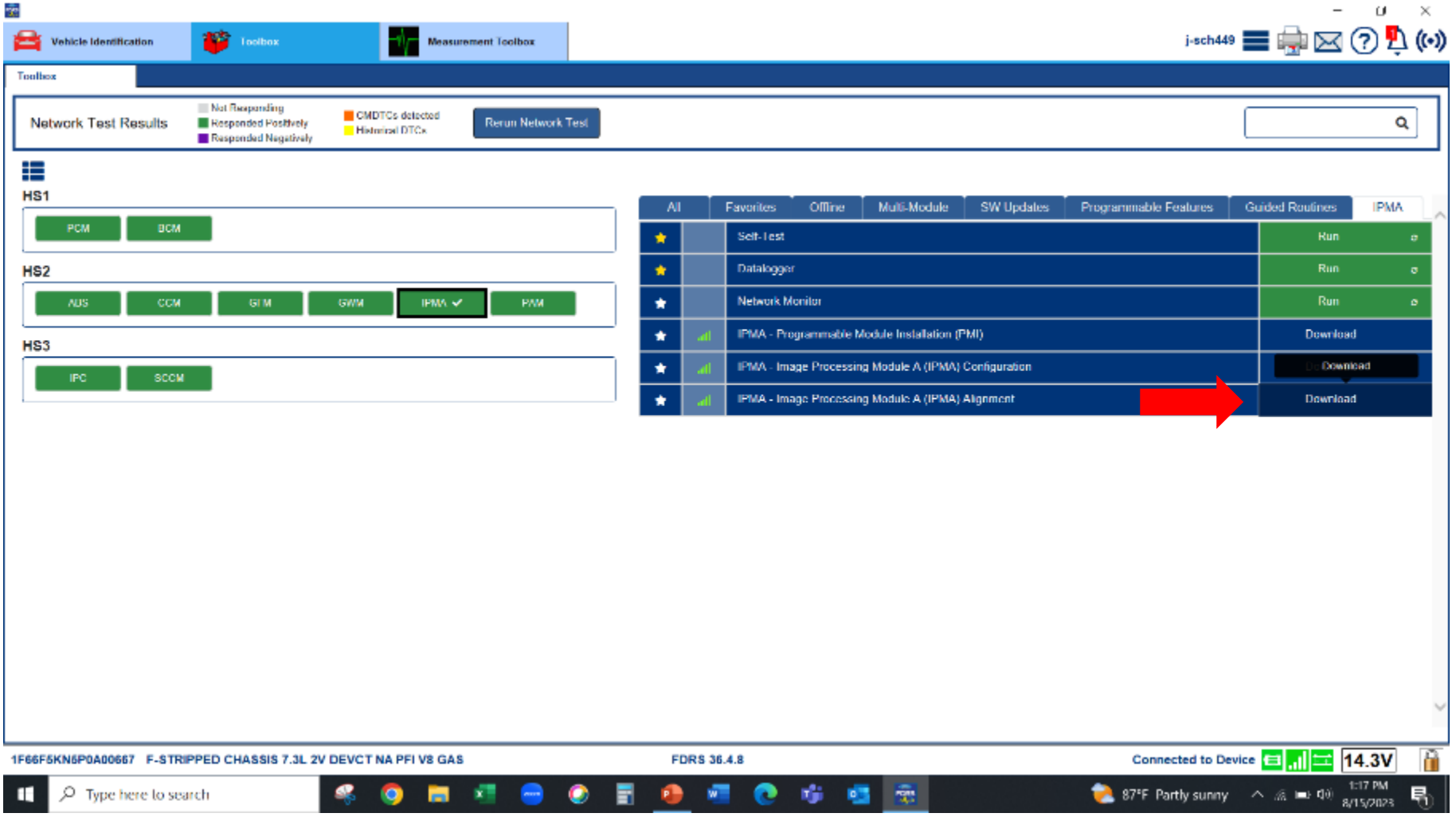
- Follow instructions on IDS to finish with calibration



Ford FDRS software
(2023 & newer model years)

Step 6. Perform alignment using Ford FDRS software and VCM adapter

- Connect Ford FDRS and launch IPM alignment as shown below
  - NOTE an internet connection is required to download and run the alignment



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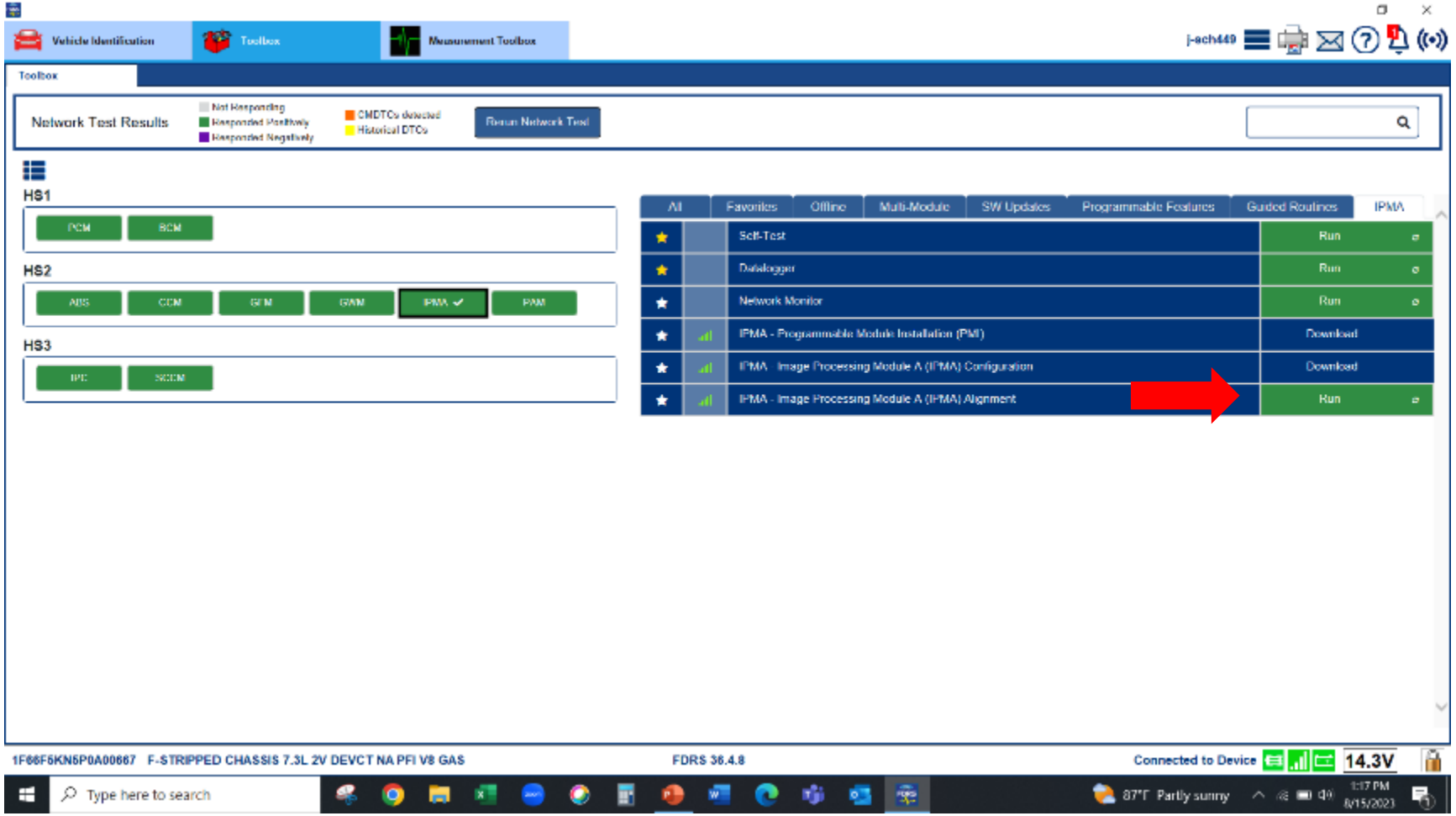

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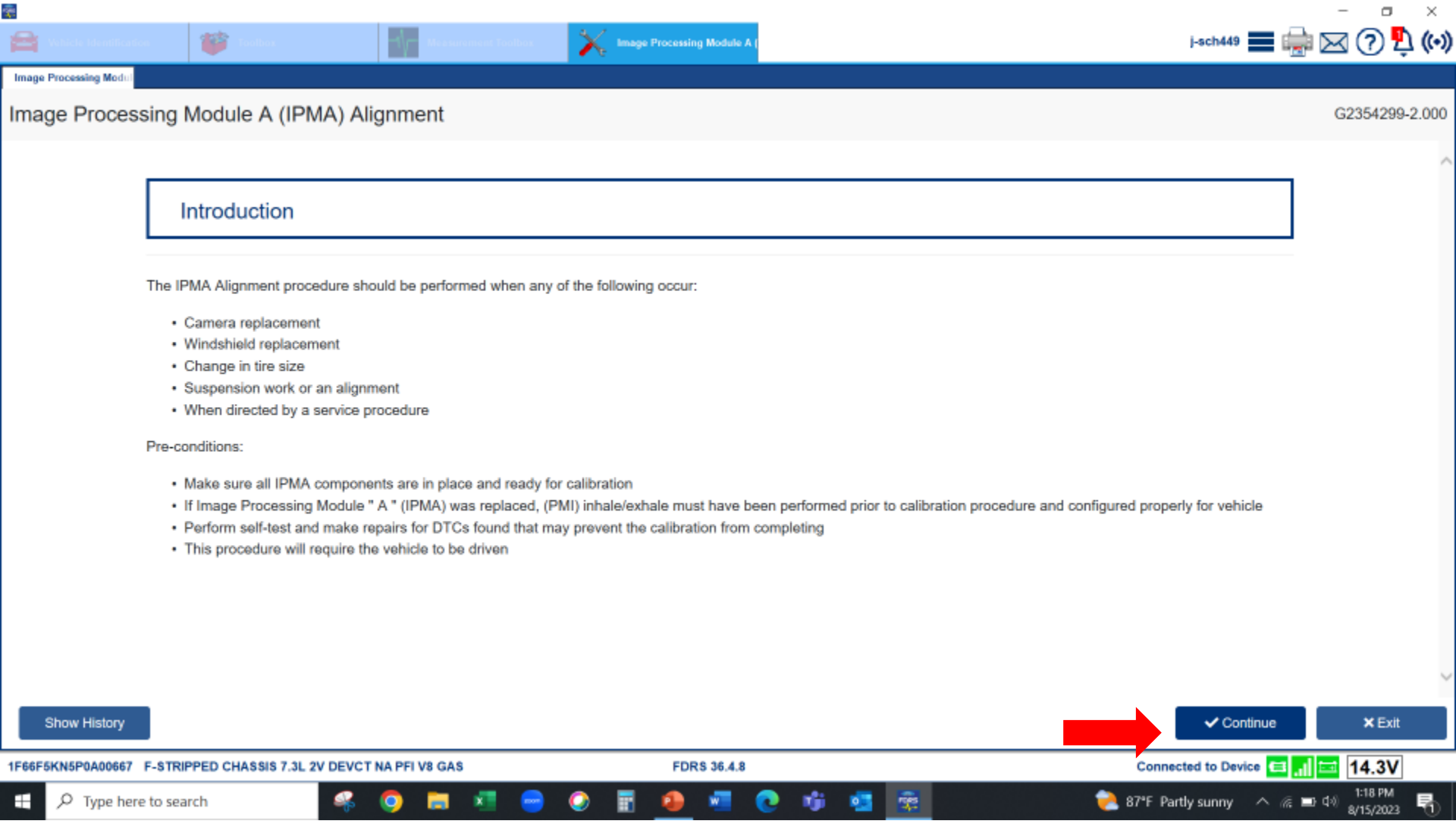
- Follow instructions on FDRS to proceed with alignment



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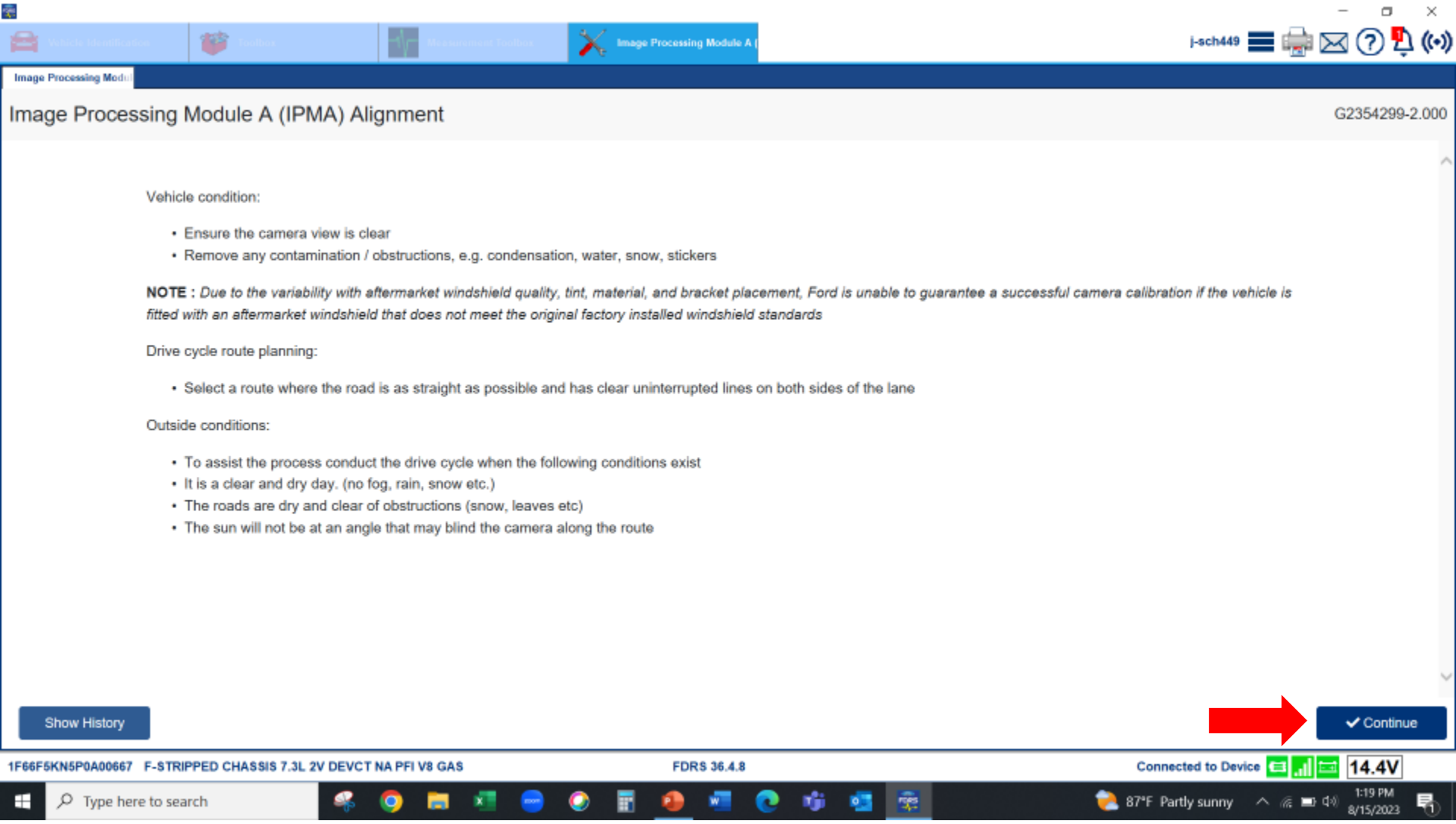

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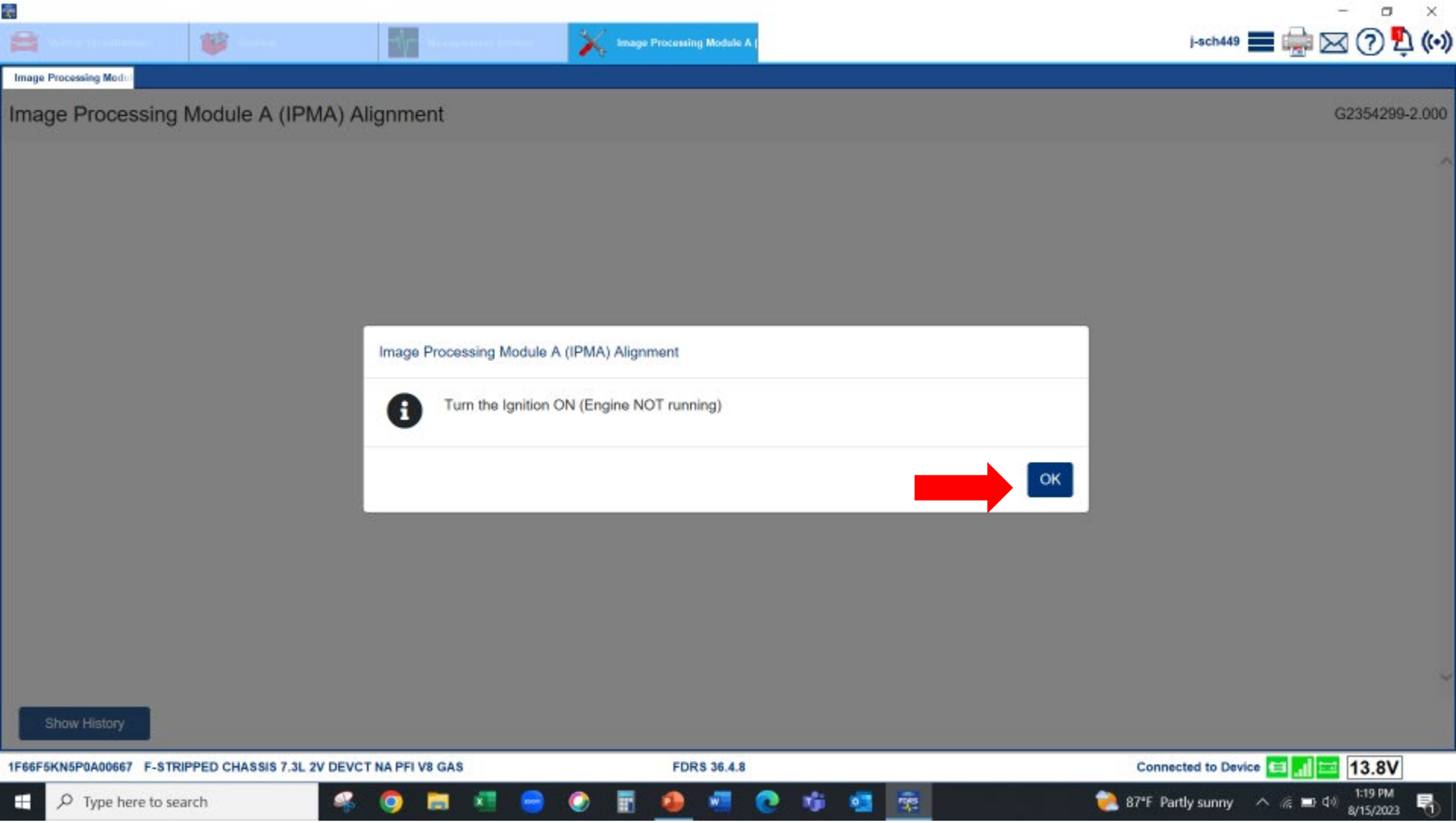

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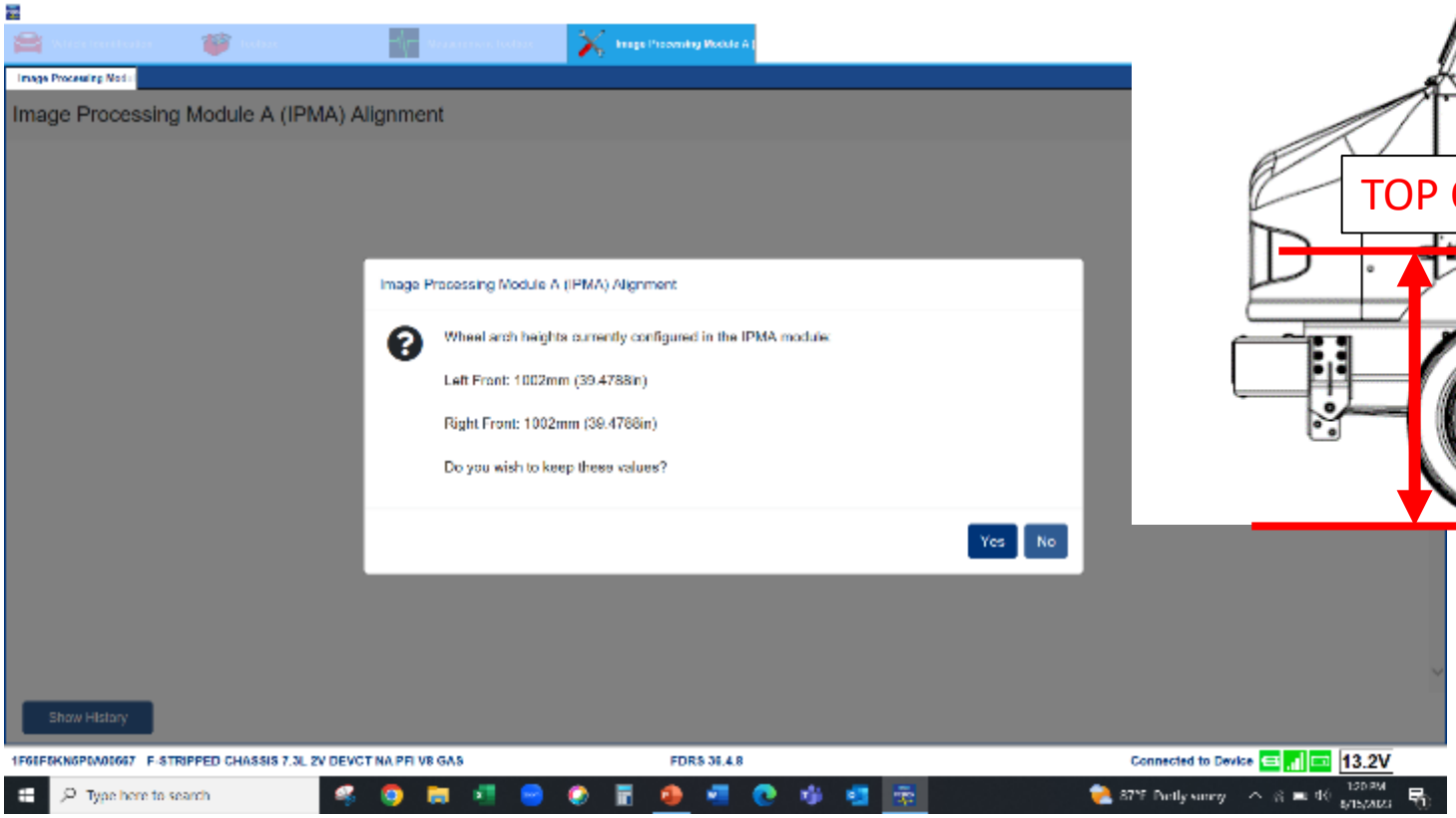

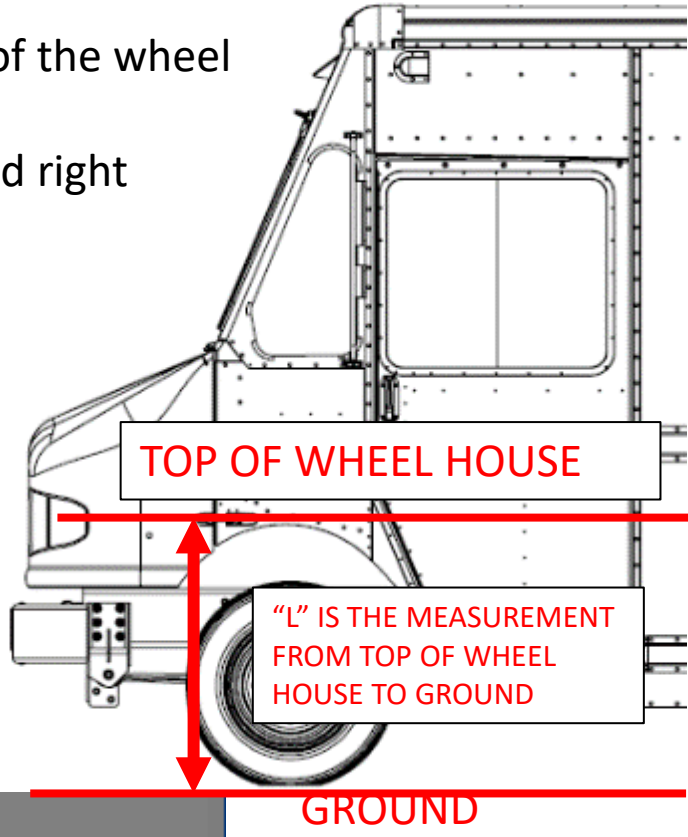

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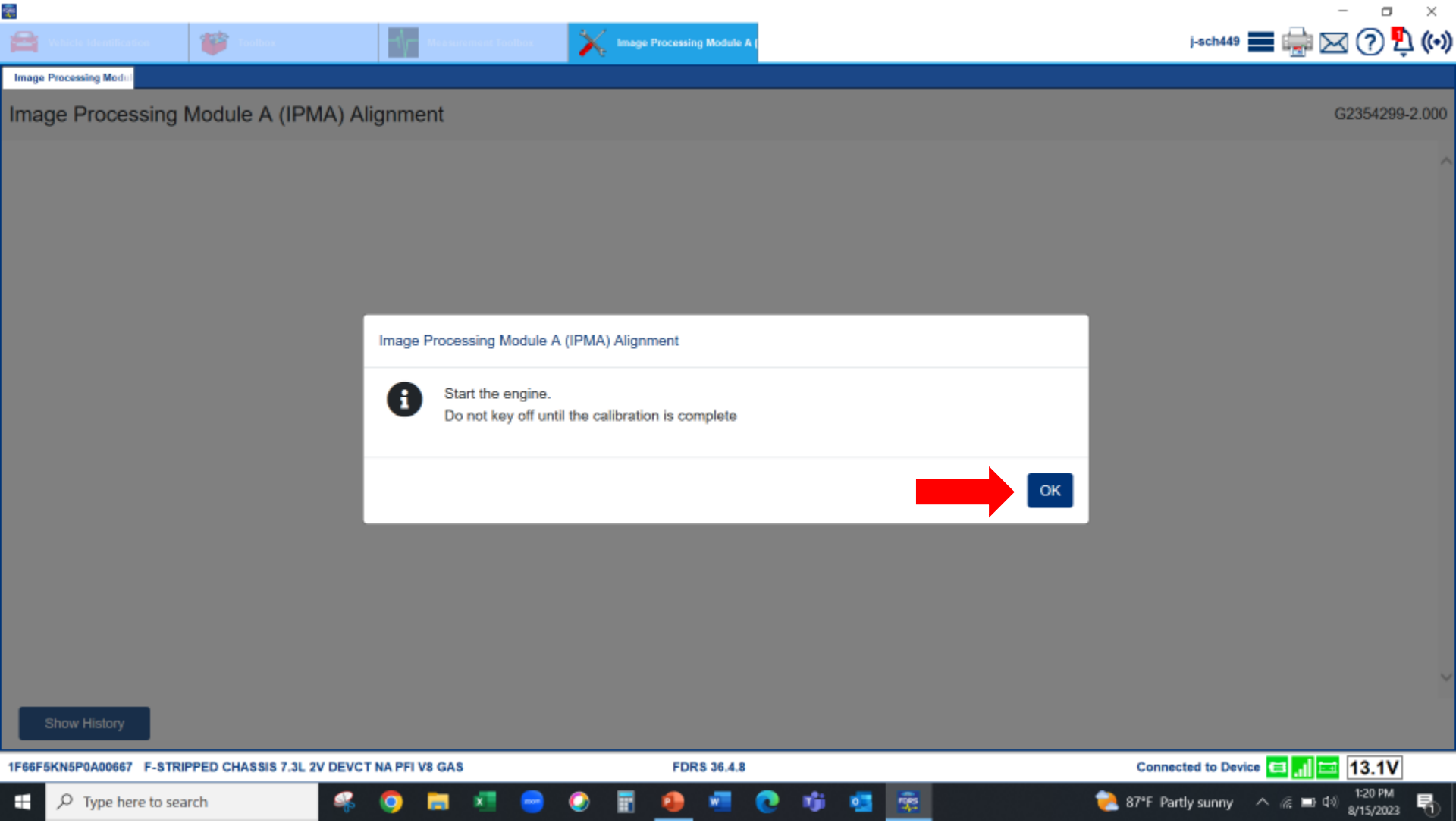

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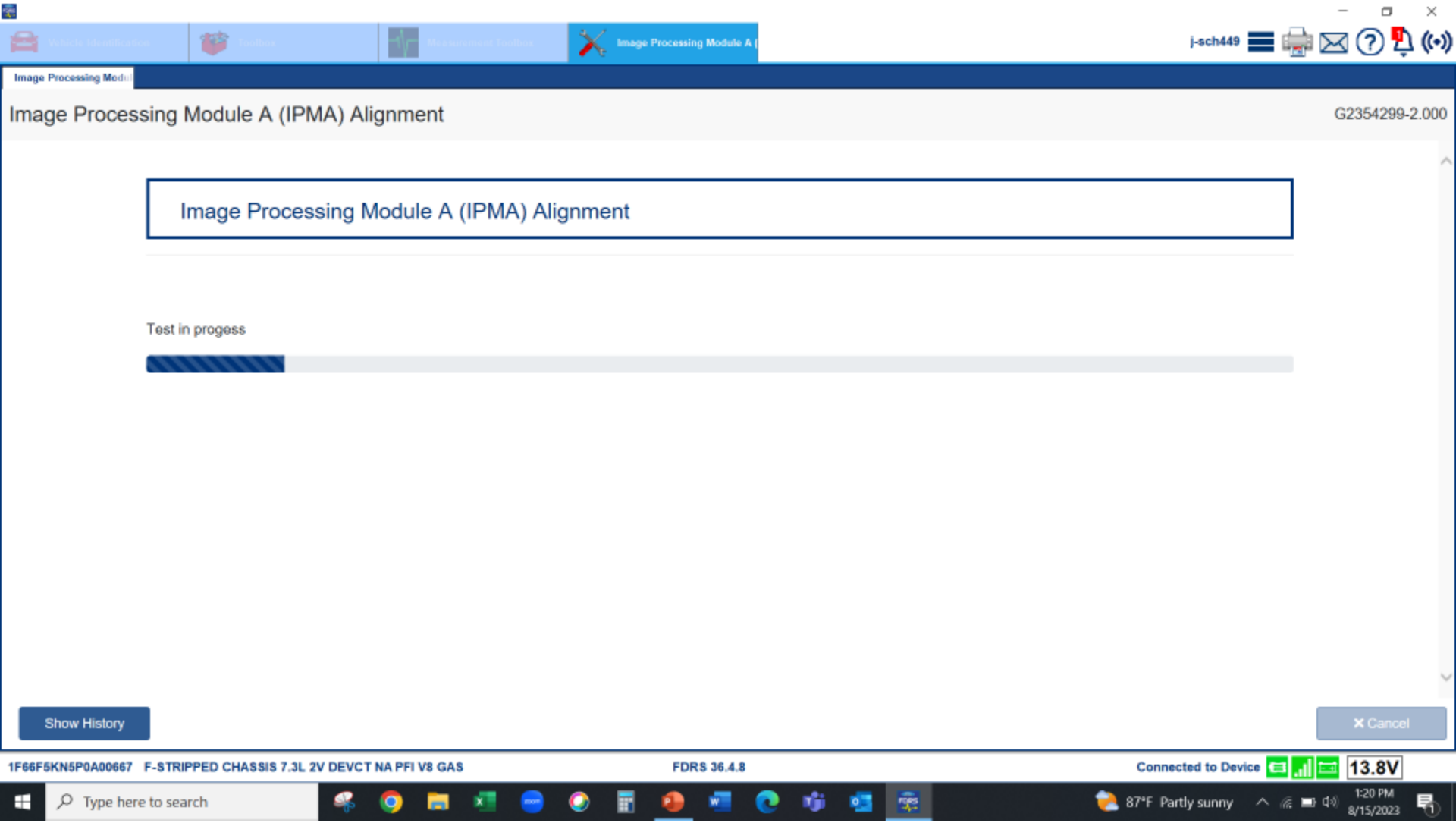

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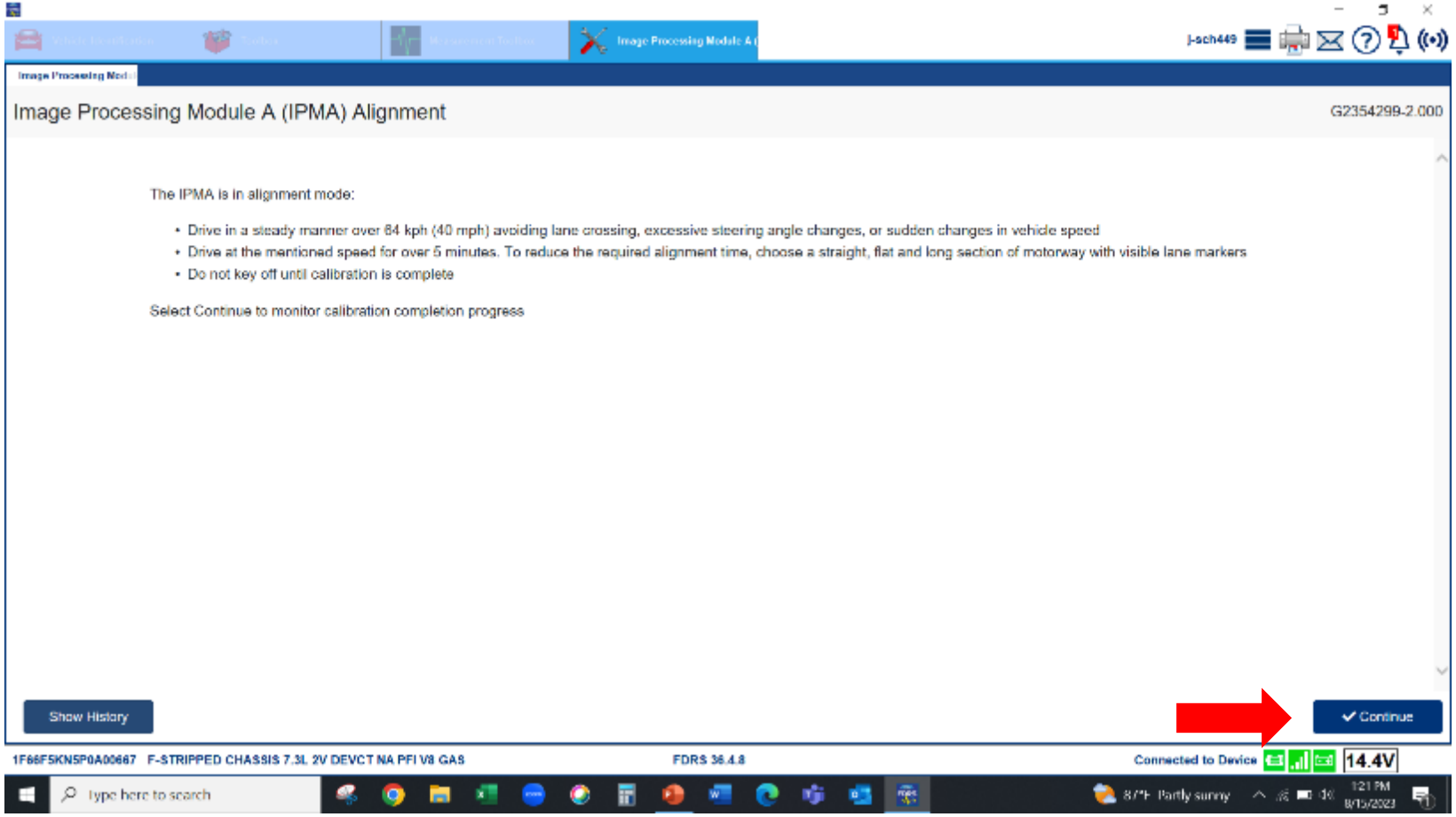

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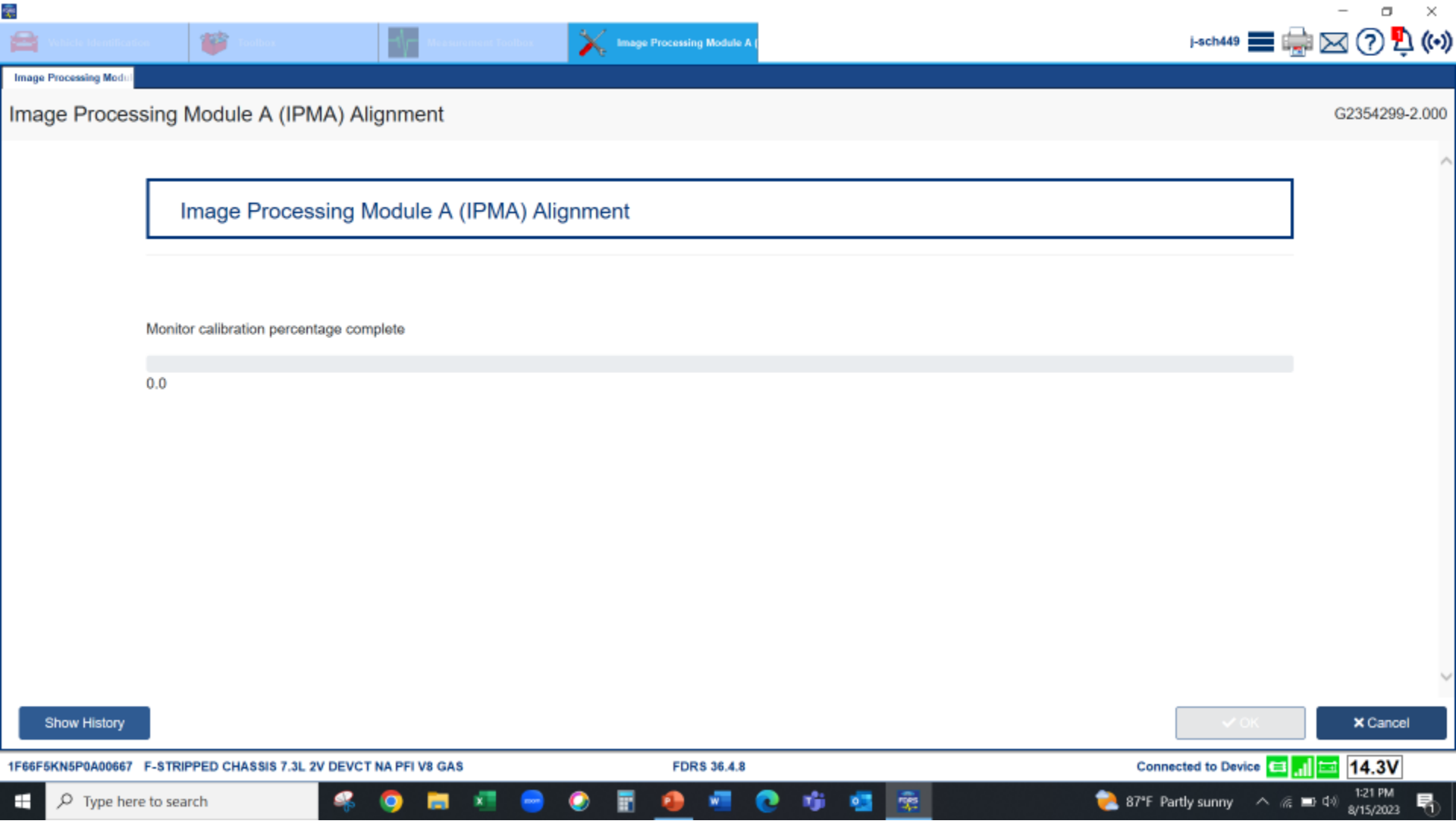

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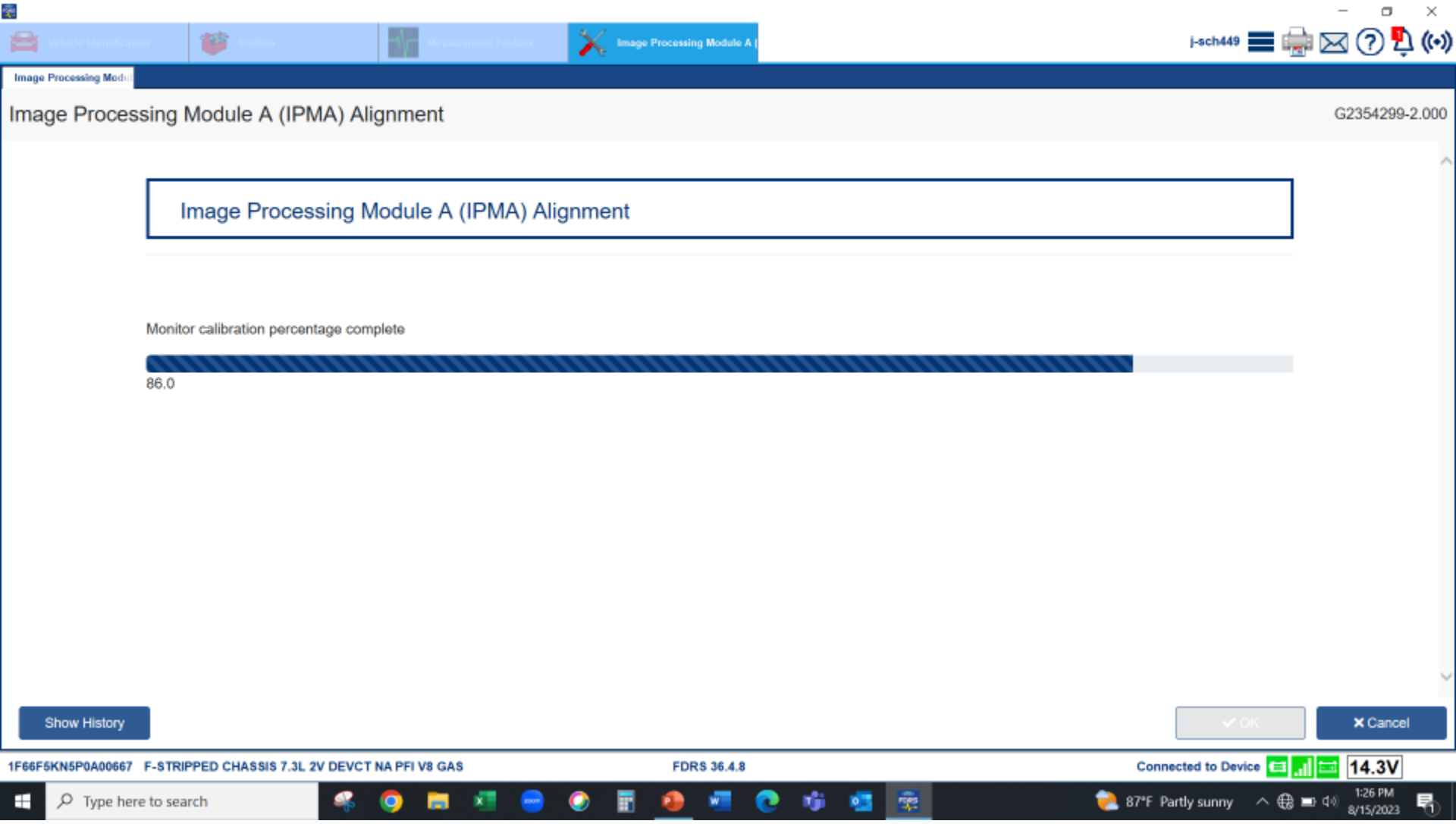

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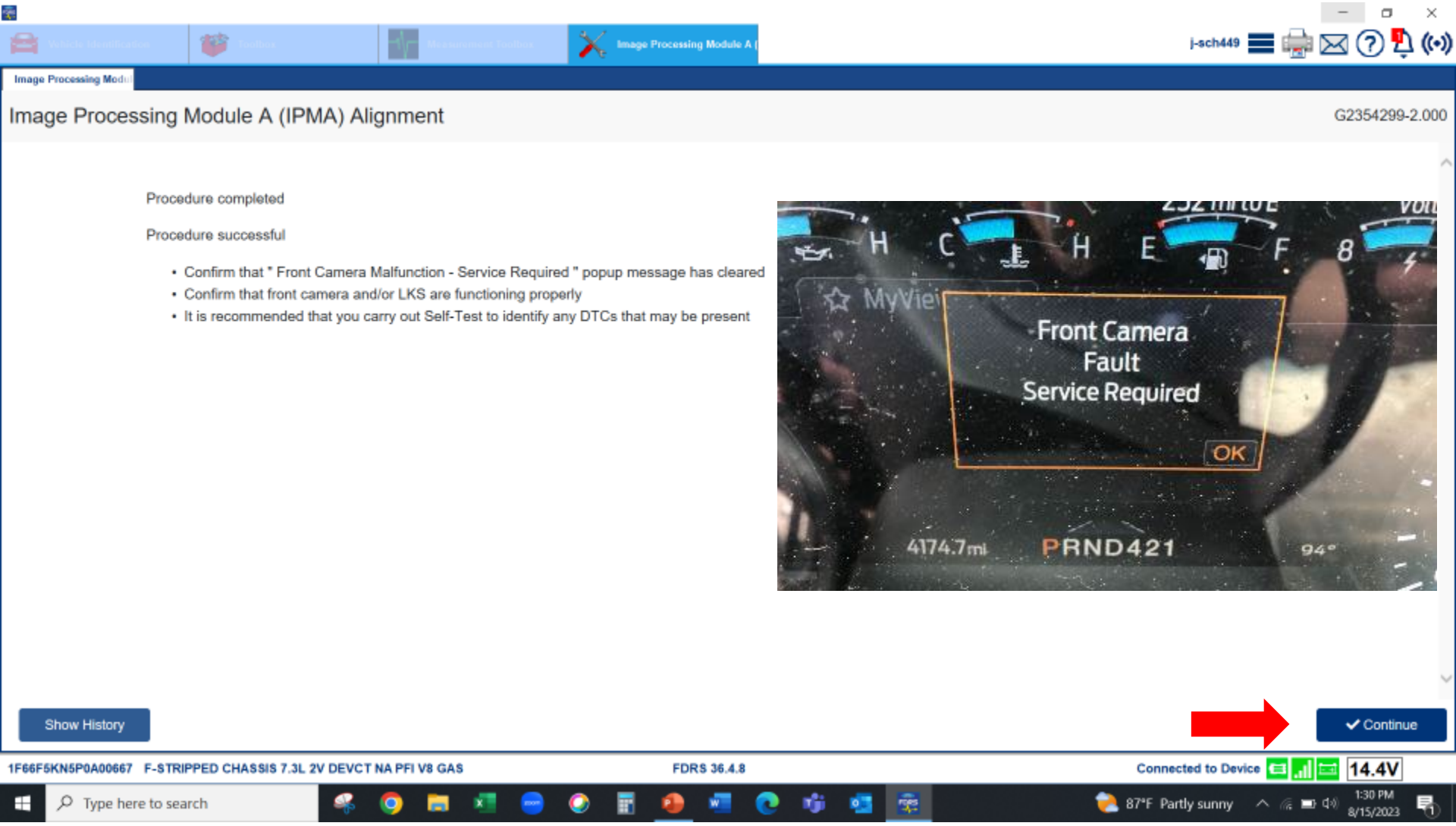

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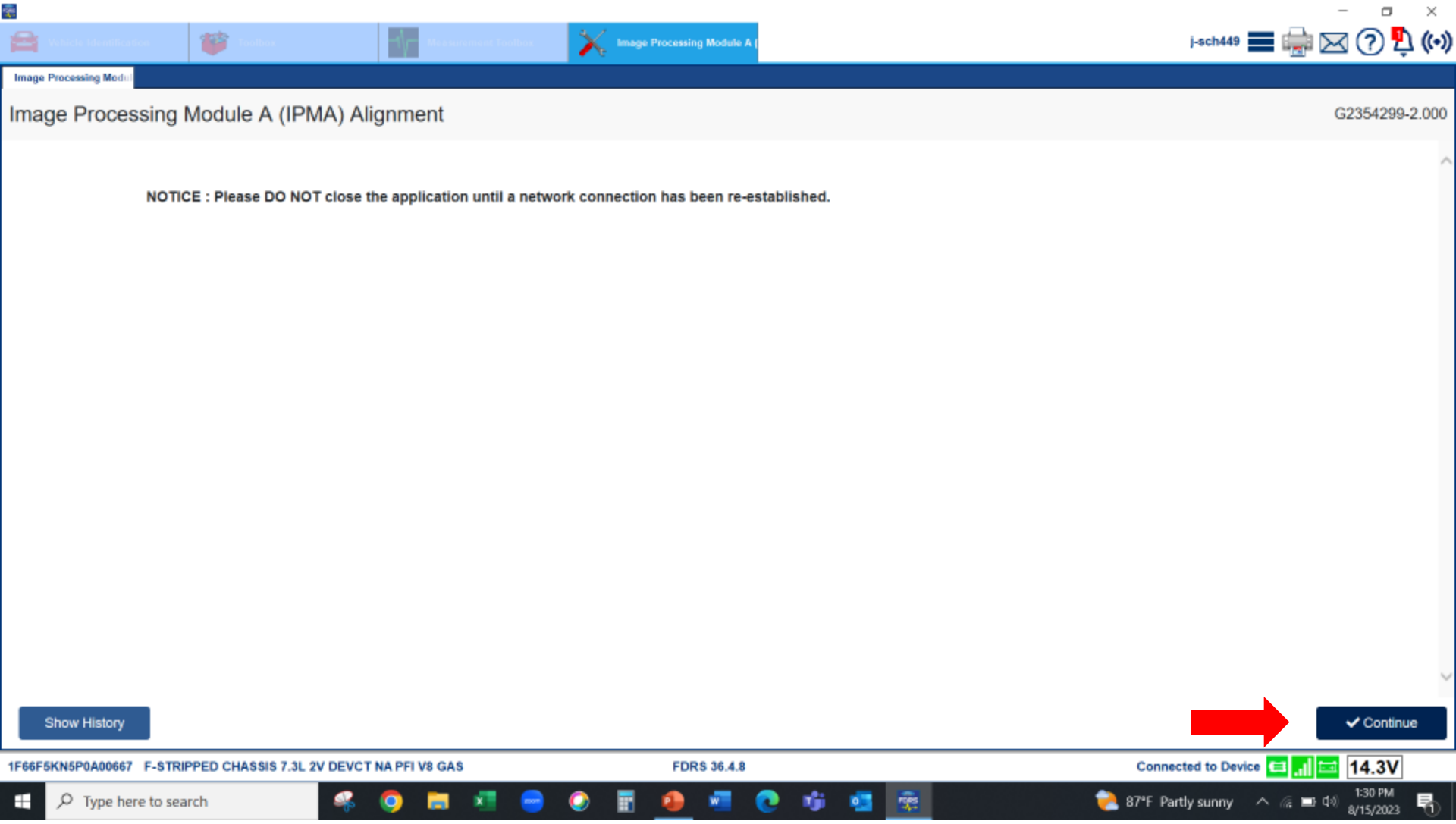

Step 6. Perform alignment using Ford FDRS software and VCM adapter

- Follow instructions on FDRS to finish with alignment