

TIER 3 - Troubleshooting Steps from T1/ T2		Step 1	Step 2	Step 3 (Applicable to agreed upon support deal with reseller.)	Support Tool Feature	Raven DEV OPs	NOTES
Raven Product Support Information: https://klashwerks.zendesk.com/hc/en-us						T3 Support will acknowledge receipt of inbound request through ZenDesk via support@ravenconnected.com or alternate email address depending on the arrangements made with partnerships within agreed upon time frames. All T3 Resolution times will depend on information provided to T3 Support.	There is no fixed SLA time for each priority. All levels of Raven Support attempt to resolve every issue on the first interaction, although this is not always possible. The entire support workflow is designed to accommodate according to the severity of each case, which should be identified in the initial communication. It is very important to outline the severity for each case, so that Raven Connected Support can adjust, as needed. However, it is equally important that you communicate to Raven Connected Support the impact of a problem. For example, the issue may not be high severity, but it might be causing a significant impact to your organization. If a support ticket does not seem to be receiving the appropriate attention, please contact: 1-833-842-0439. (Office Hours: Monday to Friday 9 AM - 5 PM EST - Excluding Canadian Statutory Holidays.)
Important	All factory reset recommendations should be enabled to allow auto-provisioning from the Support Tool.	Validate if eligible for hardware warranty.	Contact L3 when troubleshooting steps taken result inadequate results or conflicting resolution.	Determine When the Raven was first online: Raven->Side Panel->Raven->Raven Unit Status->History Enable auto-provisioning: Raven->Side Panel->Account->Auto Provision	If Raven is accessible via cellular then remote factory reset can be performed. If unit has firmware issue, attempt will be made to force update if possible. If firmware is corrupt, it will require unit to be RMA'ed.		
	No connectivity or GPS inaccurate	Check if there is cellular activity, last known connection, reception quality, check events for unit status, as it may actually be shutdown and powered off. Have customer turn off WiFi on their phone if app connectivity is the issue. If Raven displays a no cellular icon on the top left corner then it may have entered an area where cellular coverage is an issue.	Advise customer to perform a manual reboot of Raven. Remote reboot Raven (require cellular connectivity) if possible. Check account billing and unit status. Account could be in arrears or unit may have been decommissioned.	Escalate to support@ravenconnected, if connectivity or GPS issue persists after restart and factory reset.	Determine Last seen: Raven->Side Panel->Last Update Determine Reception Quality: Raven->Side Panel->Sensors (first icon) select Cell RSSI and time range	If manual reboot, factory reset or firmware update does not resolve issue, unit will be inspected by hardware engineer.	
Micro SD Card	If customer complains about live streaming, zero byte files or no videos there is a good chance the SD card is the cause. Have them remove the SD card and verify it meets the minimum requirements. https://klashwerks.zendesk.com/hc/en-us/articles/360003517594-What-type-of-micro-SD-card-does-Raven-recommend- (Undetected SD card could mean a corrupt card or slot. Advise customer to reinsert or use a known working SD card.)	If the customer claims the SD card is fine after testing on a computer and testing for corruption, request the make/ model and specifications by a picture or written. For example, the minimum requirement certifications are A1/ V30/ U3 and also send link from support site for educational purposes. https://klashwerks.zendesk.com/hc/en-us/articles/360003517594-What-type-of-micro-SD-card-does-Raven-recommend-(RMA-SD-card-if-within-warranty.)	Escalate to support@ravenconnected, if further SD card/ Raven diagnosis is required. For example, remote SD card formatting or validating Raven detecting the card.	Determine Raven Temperature: Raven->Side Panel->Sensors (first icon) select Raven Temperature and time range Determine SD Card Type: Raven->Side Panel->Raven->SD Card	If SD card is Raven issued and was corrupted under warranty or could not format correctly during T1 or T2 troubleshooting then T3 will attempt to resolve or replace.		
Provisioning (OTA Registration)	Customer experiences issue with auto-provisioning and Raven is not available on their account.	Ensure they are in cellular area and not in a garage or underground. Customer most likely did not input billing details or may require manual network reset. Instructions for that process are not published but can be supplied to Tier 1 support. Also validate that the serial number and account are paired to register automatically otherwise they will need to manually provision if allowed.	Email support@ravenconnected.com if hardware cellular module appears to be the issue	Determine Billing Details: See Recurly	DEV Ops will investigate account for errors tied to Raven and account.		
Product Feedback/ Feature Requests	Customer sends feedback and feature requests.	Steer customer to feature that may already exist by pointing to the Fleet Manager's Guide or Raven Connected support site.	Email support@ravenconnected.com with summary of trends/ common feature requests/ feedback.		DEV OPs will review to implement in development pipeline.		
Proactive Support	Tier 1 can reach out to customers when automated notices inform them that there is an issue with provisioning or cellular outages, as examples.	Contact customer advising them of the steps to perform to limit customer dissatisfaction. For example, missing billing data, if applicable to a new account.	Email support@ravenconnected.com if there is something our development team can implement to improve Tier 1 support options.	Update firmware if outdated. Left panel check: Build OS Version:	DEV OPs validate why firmware could not be updated with log file inspection.		
	Video Retrieval	Advise customer to use Remote Cloud Video to obtain events with play button to upload available videos. If customer with or without SD card cannot view or obtain videos from Raven itself or applicable SD card. Verify type of SD card and where they purchased it. Ensure they are using a micro-USB cable with data/ power capabilities connecting to Windows based computer.	If the internal storage or SD card overwrote the data then remote video retrieval is unavailable and opaque play icon appears. Send instructions from support site for how to retrieve video after an accident or how to get continuous videos from physical hardware. https://klashwerks.zendesk.com/hc/en-us/articles/360003416134-How-do-I-get-my-continuous-full-video-recordings-https://klashwerks.zendesk.com/hc/en-us/articles/360019470894-HOW-TO-RETRIEVE-RAW-VIDEOS-AFTER-AN-ACCIDENT	Escalate to support@ravenconnected.com if further SD card examination is required or AWS account may be issue. Raven log file examination may be required if media write fails occurred.	Determine SD Card Type: Raven->Side Panel->SD Card	DEV OPs will investigate account if there are issues uploading videos.	

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Non Canbus/ Vehicle Compatibility	Customer complains Raven displays stay off or goes into Parking Mode until moving forward/backward while driving with engine ON.	Verify they are non-canbus from support tool or confirm what they are driving and request model/ make/ year. All light duty vehicles older than 2008 did not have standard CANBUS protocol over OBDII. Ask if the vehicle is EV/ Hybrid or heavy duty vehicle (Ford E-Series Heavy Duty may cause similar issues). J1939 vehicles like semi-trucks require disabling CANBUS protocol along with an OBD to J1939 adaptor. All above scenarios can make Raven turn its displays off while in drive/ engine ON and the displays turn off after 5 minutes of idling. Forward/backward motion will activate out of parking mode.	Escalate to support@ravenconnected.com if custom settings are required for compatibility.	Determine Vehicle Type (CANBus?): Raven->Side Panel->Show Details->Vehicle->CANBus Type	DEV OPs will take the vehicle make/ model/ year to determine known issues or research fixes for implementation.	
	Enquiries of what Raven can do while parked. Currently, if there is an event while parked they can remotely request the video to see if the video clip captured anything. Video will be retrievable dependant on the following: Cellular connectivity, the video has not been overwritten, Raven is still plugged into a vehicle with enough battery power and there is no damage to Raven itself.	Inform customer Raven currently sends an image of movement or vehicle bumped while parked. Video recording while parked is available on storage device. Advise to live stream and take action to notify authorities if applicable.	Send link to how to retrieve old images if required. https://klashwerks.zendesk.com/hc/en-us/articles/360009350333-How-do-i-see-past-images-of-events-from-my-Raven-app-		DEV OPs will take feedback on ways to improve parked security features.	
Car battery draining after Raven installed.	Inform customer issue most likely caused by very limited driving time causing battery to deplete too low.	Battery condition and age may play a factor for this issue. Check battery condition visually at the car battery terminals. Use Support Tool to identify battery low events.	Contact support@ravenconnected, if further investigation required.	Determine Low Battery Events: Raven->Side Panel->Events (middle icon)-> Search for 'LOW' Determine Vehicle Battery Level: Raven->Side Panel->Sensors (first icon)->Vehicle Battery Voltage and select time range	DEV OPs will investigate logs, events and diagnostics to help determine root cause.	
Mount/ Adhesive	Customer reports mount is falling off or very loose and easily falls off. Possibly a cracked or expanded swivel. Request a photo to determine ambiguous description. If an adhesive issue and they are in a very hot region, RMA department will decide whether to send new mount or just send adhesive.	Request confirmation of mailing address and RMA hardware if applicable.	Report any trends regarding mount/ adhesive to: support@ravenconnected.com.		Hardware engineers will investigate issues that are significant trends and advise solutions where applicable.	
Device will not startup	Have customer hold the reset button for at least 60 seconds, upon release the unit should power on if there is no issue with Raven's battery, cable or other internal components.	Green LED light can be seen through the vents holes to verify if the unit is receiving power to the device. Request pictures of the cable and check for damage to OBD cable. Bent pins or cracks on either end, crimps, snags or cuts will void warranty on the cable and require customer purchase another one. If cable looks in good working order have them test cable and unit in another vehicle. If it works in another vehicle, then OBD port fuse may need to be replaced in the vehicle or the OBD port itself has issues.	Request picture of road side camera housing and check for any bulge on the road side camera side housing that looks rectangular. An expanded battery will protrude from housing and look rectangular. Unit will no longer work properly and should be RMA'ed if under warranty. Escalate to support@ravenconnected.com if none of these conditions exist.	Determine if log from EVENTS indicates odd behaviour before stoppage. Review EVENTS.	Hardware engineers will investigate if manufacturing defect is root cause or user damage.	
OBDDI Cable (Too short or defective)	Defective cables can be caused by the internal cable fuse to blow. If no LED lights are emitting from Raven and the customer was able use it prior to failure, then there is a possibility the cable is the issue. Request they check for bent pins or visible damage on the cable or either ends also.	Request a picture to help diagnose. If they require a longer or new cable, send link from our webstore to purchase a new 6 or 8 foot cable.	RMA cable if under warranty due to manufacturing defect but not user damage.		Hardware engineers will investigate if manufacturing defect is root cause or user damage.	
WiFi Video Downloads via mobile app	Samsung Phones and some Pixel 3 Phones have network autoswitching that causes the WiFi to disconnect during downloads. Send them instructions to disable the feature from the support site or from a Google search link. https://klashwerks.zendesk.com/hc/en-us/articles/360025045753-Switch-Between-Wi-Fi-Mobile-Data-Networks . Occasionally, Raven requires a manual restart to restore the SSID WiFi broadcast. https://klashwerks.zendesk.com/hc/en-us/articles/360003542133-How-to-Restart-Raven . Some instances where customer the SSID requires removal and re-authentication through the app.	May require firmware update if issue persists. Check Support Tool for version and update if applicable. Have customer forget all SSID WiFi connections on phone. Verify they are in the vehicle with the engine ON. Start connection via mobile app as per support site instructions. Advise a manual reboot or factory reset if problem persists.	RMA the unit if the WiFi hardware has been determined to be the issue and cannot be fixed remotely.	Determine if at latest firmware: Raven->Side Panel->OTA Build (newer firmware will be listed)	DEV OPs will investigate app logs to determine root cause and apply fixes. Resolution time will depend on severity of impacted user base.	
Abnormal fan noise	Raven's fan does emit audible noise that is more pronounced in vehicles with soundproof cabins. It is not a defect. If applicable, request video or request link to video online to assess noise. Evaluate noise: Growling, grinding or airplane engine noise is not good.	RMA unit under warranty if video evidence sounds like defective fan.	Email support@ravenconnected.com if trend identified of failed fan units.	Determine Fan Goodness: Raven->Side Panel->Sensors (first icon) select Fan Goodness and time range	Hardware engineers will investigate if manufacturing defect is root cause or user damage.	

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Gestures (Automatically triggering 30 second short videos.)	Hidden third film, loose mount or adhesive cause invalid gestures. Send link on how to test for either. https://klashwerks.zendesk.com/hc/en-us/articles/360010943754-My-Raven-is-automatically-gesturing-too-often	Request a photo of the setup if issue persists. Picture can usually identify film or setup issue like an object causing the issue.	Contact support@ravenconnected.com if Raven hardware may be issue after previous troubleshooting.	Determine Gesture Events: Raven->Side Panel->Events (middle icon). Determine if EVENT_INVALID_GESTURE event is prevalent under EVENTS.	DEV OPs will investigate if logs indicate invalid gestures. Hardware engineers will investigate if manufacturing defect is root cause or user error.	
Webapp/ Password Reset	Customer reports white screen or no access to account. Verify they are using the correct email address, no caps lock or have them reset their password if neither the mobile or computer webview works.	Customer informs they are inputting correct values but still cannot get in. Have them close all browser sessions open then try again. Request screenshots of errors, if possible. If the customer can access their webview from their phone that eliminates the account being an issue and most likely issue with the computer. Send link to use free version of Malwarebytes or CCleaner or advise having an IT professional inspect their computer for issues if allowed by Tier 1 supervisor. Add-ins also cause issues so they may need to remove bad browser plug-ins. Check junk mail folder to confirmation code.	Escalate to support@ravenconnected.com web app service is down or password reset not working. If reseller is operating own environment, contact their cloud administrator.		DEV OPs will investigate account logs if direct Raven customer.	
Privacy Concerns	If customers want the microphone disabled due to privacy they can either inform the staff or clients affected.	If they request disabling audio recording, request for units they wish to be disabled.	Send request information to support@ravenconnected.com to disable microphones on requested devices.		DEV OPs will investigate if security breach occurred or needs improvement.	
Speed and address incorrect	Customer complains the speed or addresses are incorrect. Inform them they can report to Open Street Maps directly by clicking on the icon in the app.	Customer should be advised under passes and freeways lose GPS location due to overlap which can cause errors.	Email support@ravenconnected.com for trends/complaints regarding the accuracy of the database.	Determine if customer GPS is working correctly. VEHICLE GPS Accuracy: Heading: Last GPS Update:	DEV OPs will collaborate with applicable vendor to determine if the issue resides from outdated database. Hardware engineers will determine if it is a manufacturer defect or user damage.	
Carrier Outages or SIM card Issue	Inform customer of maintenance or service outages. Validate SIM card installed correctly.	Email all affected customers or by as-needed basis for outages. Issue new SIM card if determined SIM card is faulty.	Email support@ravenconnected.com if SIM slot is determined to be the cause of connectivity error.		DEV OPs will determine if carrier outage caused integration failures. Hardware engineers will determine if SIM card or slot was root cause.	
Hotspot data use discrepancy with invoice.	Validate hotspot use from carrier data and support tool data.	Send data breakdown to customer if there is no discrepancy.	Contact L3 if there is a data discrepancy.	Determine Data Usage: Raven->Side Panel->Databins (last icon) Log into Twilio or applicable carrier admin console.	DEV OPs will validate all logs with data to confirm or dispute discrepancy inquiries.	
Harsh braking/ possible impact detection clip unavailable in the cloud.	Video may have never uploaded to cloud due to video overwritten or issue with SD card or internal video processing.	Check Raven temperature of when the event requested failed. Recommend larger capacity SD card if data overwritten with a day of reported issue. Ensure SD card is Raven issued.	Contact L3 if issue persists.	Determine Raven Temperature: Raven->Side Panel->Sensors (first icon) select Raven Temperature and time range Determine SD Card Type: Raven->Side Panel->Raven->SD Card	DEV OPs will investigate if the issue resides in the cloud services or hardware issue.	
Event video clip cannot be uploaded.	Check to see if the SD card is still there. Data may have been overwritten if requested too far in the past.	Check Raven temperature of when the event requested failed. Recommend larger capacity SD card if data overwritten with a day of reported issue. Ensure SD card is Raven issued.	Contact L3 if issue persists.	Determine Raven Temperature: Raven->Side Panel->Sensors (first icon) select Raven Temperature and time range Determine SD Card Type: Raven->Side Panel->Raven->SD Card	DEV OPs will investigate if the issue resides in the cloud services or hardware issue.	
Error occurred. Please try again later (#82)	Have customer try video request again. This error applies to when video request from cloud is unavailable. Sometimes Raven is too hot or there were too many processes happening at the same time.	If error persists, have them manually reboot Raven or remote reboot for them.	Contact L3 if reboot does not fix issue.	Determine Raven Temperature: Raven->Side Panel->Sensors (first icon) select Raven Temperature and time range	DEV OPs will investigate if the issue resides in the cloud services or hardware issue.	
SD card video unusable or missing video.	Ensure customer is using Raven supported SD card. Request videos if possible. Free SD card test software available for free. (H2testw). If test fails, RMA Raven issued SD card. If not Raven issued, recommend customer use Raven issued SD card.	Request time/ date of videos that they are seeking to see if there are any recorded events to decipher where issue may lay. Failed SD cards may indicate a counterfeit SD card from customers using ones not issued by Raven. If video file is available, try using VLC Player to view video and/ or recover file.	Contact L3 if unable to recover videos using third party software decoders.	Determine SD Card Events: Raven->Side Panel->Events (middle icon) Determine SD Card Type: Raven->Side Panel->Raven->SD Card	DEV OPs will investigate Raven logs for SD card information and hardware engineers will validate possible root cause.	
SD card appears to be stuck and cannot be removed.	Request pictures of the unit to ensure no damage to Raven. Verify if Raven issued SD card was used in unit.	If unit appears in proper shape, request the customer take their thumb and swipe to the right over the SD card to help eject the SD card. Some SD cards are not perfect so there can be a possibility of heat warpage. Raven should be displayed up when advising the tip mentioned above.	Contact L3 if SD card is still stuck. RMA recommended if walking customer through process to remove fails.	Determine SD Card Events: Raven->Side Panel->Events (middle icon) Determine SD Card Type: Raven->Side Panel->Raven->SD Card	DEV OPs will investigate Raven logs for SD card information and hardware engineers will validate possible root cause.	
Raven battery will not longer hold a charge.	Ensure there is no damage to OBD cable. Test in another vehicle with another cable or use micro USB 2.0 to see if unit charges under a Windows based computer.	If unit can be seen on computer it is possible OBD cable is issue. If Raven works with different OBD cable and remains charged the cable or OBD fuse in vehicle may be the issue. Check Raven and vehicle battery levels to see if there are signs of rapid charge/ discharge.	Contact L3 to validate charge levels.	Determine Raven Battery Voltage: Raven->Side Panel->Sensors (first icon) select Battery Voltage (Raven) and time range	DEV OPs will review Raven history, logs and data. Hardware engineers will determine manufacturer or user damage.	

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Fan appears to be making strange noise.	Request video/ audio recording. If noise sounds like rubbing of fan blades or erratic whirring noise confirm with other staff that audio sounds irregular.	RMA unit if inconsistent with normal fan operating noise. Validate if under warranty.	Contact L3 if unable to determine if fan is defective.	Determine Fan Goodness: Raven->Side Panel->Sensors (first icon) select Fan Goodness and time range	DEV OPs will review Raven history, logs and data. Hardware engineers will determine manufacturer or user damage.	
Connecting to Raven via mobile or web app is displaying a no response message. Unit not updating data or events.	Validate that the unit is receiving data and not just small data packets. Low packet numbers such as 100 or less indicate the device may require a network reset.	If Raven does not come back online afterwards, full factory reset combined with a network reset to re-register the device.	Escalate to L3 if device no longer registers. Typically failure would be indicated by boot up arrows continually circling and never stop. Full failure where unit is no longer booting up even after cool down from exposure to extreme heat.	Determine Last seen: Raven->Side Panel->Last Update Determine Data Usage: Raven->Side Panel->Databins (last icon) Log into Twilio or applicable carrier admin console.	DEV OPs or hardware engineers will determine if manufacturing issue or user damage.	
Raven will not boot up or power on when engine has been started.	Validate Raven has LED lights seen through the vent holes by the power plug. If seen, advise holding the grey reset button for 60 seconds to manually hard reboot Raven. Make sure OBD cable is not defective by having customer test in another vehicle. No LED lights in Raven could indicate a blown OBD port fuse in vehicle. If Raven works with another cable or in another vehicle, then determine if cable or fuse is the issue.	If the unit fails to fully restart, advise unplugging unit for 30 minutes before replugging it to OBD port. This will either cool unit down and also discharge Raven as it sometimes requires a full reset. Check for any cable damage, crimps, knots or bent pins. Check for loose connections at the power connection end on Raven's side. If power port connection is loose or damaged it may require RMA if under warranty. Pictures will be required to ensure no user damage.	RMA cable or unit depending on what appears to be defective and/ or if under warranty.	Determine if EVENTS indicate sudden stoppage of logical event order. For example, look for LOW_BATTERY, SHUTDOWN, type events. Determine Raven Temperature: Raven->Side Panel->Sensors (first icon) select Raven Temperature/ Raven Battery behaviour and time range	Hardware engineers will determine if manufacturing issue or user damage.	
Raven display has lines, one display shows up.	Request pictures from customer to validate what exactly they are seeing on the display itself. Make sure they have not set one display to blank, request customer factory reset unit.	If lines look like pixel display issue, start RMA process. If after factory reset display is still missing, RMA unit. Customer will know immediately if they cannot see the recovery menu.	Contact L3 if unsure of whether it is caused by customer misuse. Pictures will help validate.		Hardware engineers will determine if manufacturing issue or user damage.	
Raven shows no displays while driving (engine on) and live stream can see exterior/ interior cameras.	Check to see if vehicle has VIN, make/ model to see if earlier than 2008. Find out if it is a hybrid or EV. If a heavy duty vehicle, most likely J1939.	If the display does not turn back on after driving forward or backward in drive mode, request the unit be factory reset to eliminate any operating system error. If they cannot get to recovery menu, possible hardware issue.	Contact L3 to perform remote factory reset if unit still has cellular connectivity.	Determine Reported Vehicle Type: Raven->Side Panel->Vehicle	Hardware engineers will determine if manufacturing issue or user damage.	
Raven data use mismatches invoice.	Verify live streaming and/ or hotspot data use. Record the data used per type of event and also check carrier data download/ upload to validate against our data.	Send information to customer with breakdown of a data use.	Contact L3 if data does not match events on their device.	Determine Data Usage: Raven->Side Panel->Databins (last icon) Log into Twilio or applicable carrier admin console.	DEV OPs will validate all logs with data to confirm or dispute discrepancy inquiries.	
Video is not recording on Raven	Video service may not be running properly on Raven. Manually reboot unit or request they perform factory reset. If they are using a non-standard SD card they need to remove and use without. If internal video recording exhibits same issue, then factory reset unit.	Update firmware if unit has not received latest version.	Contact L3 if video is still not recording after reboot or factory reset.	Determine SD Card Type: Raven->Side Panel->Raven->SD Card	Hardware engineers will determine if manufacturing issue or user damage.	
Network reset does not fix connectivity issue.	Request customer perform factory reset plus network reset. Check data use to ensure they have not exceeded their limit. Check for possible location issue. Last known coordinates could indicate poor cellular location. Makes sure no cellular inactive icon or No SIM warning is not displayed on unit.	If the unit does not come back online, unit may have a hardware issue. For example, arrows continue to rotate or unit stays on check mark. Ensure customer is in a cellular accessible location. Make sure that Raven is set to the correct customer to allow provisioning under account.	RMA unit if arrows will not stop rotating. Contact L3 to double check unit is registered correctly. If unit is set correctly yo user and after two factory/ network reset combinations the unit stays on the check mark, RMA unit.	Determine Data Usage: Raven->Side Panel->Databins (last icon) Log into Twilio or applicable carrier admin console. Determine Reception Quality: Raven->Side Panel->Sensors (first icon) select Cell RSSI and time range	Hardware engineers will determine if manufacturing issue or user damage.	
Exterior and/ or interior camera is blurry.	Make sure there is nothing covering the camera lens. Request pictures of the camera (front/ back) to validate. Request pictures of the blurry image/ videos from a live stream or preview images.	Have them perform a factory reset to eliminate software errors.	RMA unit if evidence requested validates blurry images.	Determine Raven Temperature: Raven->Side Panel->Sensors (first icon) select Raven Temperature and time range and make notes of prolonged exposure to extreme temperatures.	Hardware engineers will determine if manufacturing issue or user damage.	
Raven GPS is not working.	Check support tool to see if GPS was ever seen after set up. Request customer reboot unit manually.	If customer is unable to reboot manually, initiate remote reboot. Recommend factory reset to eliminate software issue.	Contact L3 if unable to remote reboot to see if they can do so. If unit has never received a GPS location even after factory reset, RMA unit.	Determine Last GPS message: Raven->Side Panel->Show Details->Vehicle->Last GPS Update	Hardware engineers will determine if manufacturing issue or user damage.	
Trip history is not correct or missing.	Request the time/ date of missing trip history from specific unit.	Request their credentials if required to see exactly what they are reporting.	Contact L3 to investigate cloud account.	Determine if EVENTS are actually reported from vehicle in question.	DEV OPs will investigate cloud account if direct Raven account or using Raven cloud services.	
Gesture feature not working or creating invalid gestures.	Ensure they do not have a hidden film on display or anything in front of the unit. Very unit is not angled in odd manner that would trigger gesture sensor.	If still creating gesture issue. Request picture of the gesture sensor to see if manufacturer left debris or tape inside unit.	Send pictures of gesture sensor window to L3 to investigate and recommend whether to RMA unit.	Determine Gesture Events: Raven->Side Panel->Events (middle icon). Determine if EVENT_INVALID_GESTURE event is prevalent under EVENTS.	Hardware engineers will determine if manufacturing issue or user damage.	
New Raven appears used or covered in dust.	Request photos of unit, the box and any visible damages.	If there are no damages to the box or unit, ensure customer it was caused by the box drying and unit will function 100% without issue.	RMA unit if customer is not content with answer that unit is not refurbished or damaged.	Determine if unit was provisioned. Side panel Raven Unit Status: HISTORY	Hardware engineers will consult manufacturing or logistics to determine root cause.	
Power port on Raven is detached broken off.	Request pictures from customer. If it looks to have been caused but user error then do not RMA unit.	If customer denies damaging unit, have the unit sent in for inspection. If it appears to be manufacturing issue, document and record for Raven.	Contact L3 with pictures and any other evidence to support RMA.	Determine history of EVENTS to identify how Raven behaviour to see if UNPLUGGING events correlate to user unplugging or is random.	Hardware engineers will determine if manufacturing issue or user damage.	

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