EVD Agent contract

Page under construction

Diagram of the AOT and dependency between agent and EVD

under refinement

Upon receiving an car arrival from nexeo, the Agent listen by default during 3 seconds or the time set in the value passed as parameter (`mcd_hme_arrival_delay` flag on CMS configuration).-> set to 5 for few stores

- if EVD is healthy or EVD car ready from EVD
  - trigger session to start at the EVD ready reception
- if EVD is not healthy
  - start the session at the end of the buffer period
- if EVD is healthy but EVD ready is not posted
  - the agent will not trig the session to start until EVD ready is posted

How do we know that EVD is healthy

- we are using a flag “ use “mcd_nexeo-evd_use_heartbeat “
  - if this config is set to true - we do wait for 3 sec

- if no config - the code is waiting for heartbeat

configuration used can be checked via S3 using the chat_log_header.json file to check the values

Health signal was supposed to be depreciated - To be confirmed

if confirmed we can consider the depreciate the code relative to Health - until this time we still can consume both either health or heartbeat

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EVD - Agent contract (list the MQTT events submitted by EVD to Agent)

https://us-confluence.mcd.com/display/DICD/EVD+%28Enhanced+Vehicle+detection%29+PDR

By design the agent expect the following sequence:

- car arrival from HME NEXEO
- ready signal from EVD when the car is in the proper position
- car departure from HME NEXEO

Here are listed the metrics required in 2023 to track potential issue(s) about the sequence of the events:

- Number of ready coming out of the session (ready signal coming after the arrival) - in this case the agent would ignore the ready signal and then wait for the arrival
- Number of sessions with ready posted after the car departure - same in this case the agent would ignore the ready signal posted after the departure but would log it
- Number of session with more than 1 ready signal posted by EVD - (Agent would ignore by design the others)

Over all all this cases would be ignored by the agent but can lead to identify a problem in the way the event are propagated over MQTT and need to be properly monitored.

Event - logs generated

Event fired	CMS logs
Use case : EVD is healthy ***Heartbeat*** payload sample: `{"meta": {"timestamp": "2022-03-08T17:24:25.331654+00:00", "msgId": "dd030823-f6f3-4ba4-8c17-9e12116fcce3", "msgType": "resp", "appVersion": "v3.0.2"}, "payload": {"response": "OK"}}` Topic: `evd/response/heartbeat/lane{number}`	File: `cms_oos.log` Log message: `"EVD heartbeat signal received %s" % payload` Log level: DEBUG (by default not emitted on production)
Waiting EVD ready - ie EVD ready not fired yet	File: `cms_oos.log` Log message: `"AOT checking EVD heartbeat, awaiting ready signal"` (it can happen multiple times, every 1sec) Log level: INFO
EVD ready fired ***Ready*** payload sample: `{"meta": {"appVersion": "v3.0.2", "carID": "e3ea55fc-205b-433a-bffa-c5865532a23e", "classificationModelVersion": "image_classification.model", "msgId": "7265b355-84f1-40ed-9600-ee5c309a237c", "msgType": "request", "objectDetectionModelVersion": "11_23_2019", "randomForestModelVersion": "finalized_model_rf_hyper_opt_11_05_2019.sav", "responseTopic": "aidt/response/health/lane1", "timestamp": "2022-09-28T23:50:12.080651+00:00"}, "payload": {"decision": "object_detection", "event": "ready"}}`  Topic: `evd/request/lane{number}/ready`	File: `cms_oos.log` Log message: `"EVD ready signal received %s", payload` Log level: DEBUG (by default not emitted on production) --- File: `cms_oos.log` Log message: `EVD ready: triggering car_arrival` Log level: INFO
Agent defaulting as EVD ready not provided	File: `cms_oos.log` Log message: `EVD is not healthy after 5 seconds, triggering car_arrival` Log level: INFO

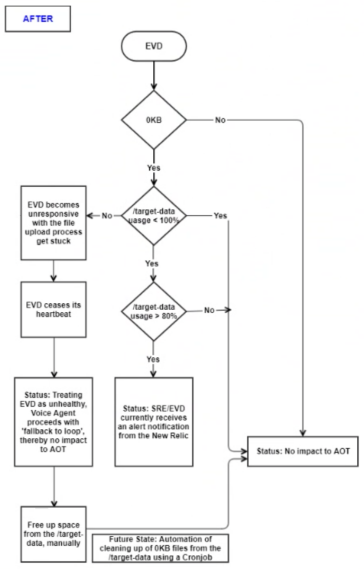
EVD default because they can not process object detection For Ben to provide us the payload of the evd event	

QA validation

Test case	Steps	Status	
EVD is healthy	Set up EVD Verify CMS debug logs(`cms_oos.log`) or mqtt events Log msg to verify: `"EVD heartbeat signal received %s" % payload`		
Waiting EVD ready - ie EVD ready not fired yet	Have EVD ready Cover EVD with napkin Verify cms_oos.log or mqtt events Log msg to verify: `"AOT checking EVD heartbeat, awaiting ready signal"` (it can happen multiple times, every 1sec)		
EVD ready fired	Have EVD ready Trigger car arrival		

Action items

Specific case of the 0 Kb file ; to prevent the issue with volume filed by 0 KB files - the EVD system will be updated to stop producing the heartbeat in this case

Topic	Fix	Owner
Specific case of the 0 Kb file ; to prevent the issue with volume filed by 0 KB files - the EVD system will be updated to stop producing the heartbeat in this case		EVD team to apply a change

Create automated cases to verify the cases EVD stop producing the heartbeat and restart producing the heartbeat Agent - EVD integration non regression suite tests		WO - IBM
Early greeting A mechanism is part of WO code to take In the case EVD get to a non healthy state and do not produce the Ready signal for a session We don't give time for CMS to consume EVD ready, it arrives after the arrival delay. So it automatically sets the ready flag for the next session.Once that happens, we would start early greeting for every new session.		WO IBM fix is implemented on 1.15
Camera not plugged if service is up but camera not plugged - EVD should not post heartbeat because they are not functional		EVD
Camera producing image not good enough to get recognized (napkin test) EVD should not fire an heartbit		EVD
EVD tracing - @ Kunal Khanna and @ yubin.qiu		