Research & Vehicle Technology
"Infotainment Systems Product Development"

Feature – IP Pass Through Client

Infotainment Subsystem Part Specific Specification (SPSS)

Version 1.2~~1~~
UNCONTROLLED COPY IF PRINTED

Version Date: September 4, 2018

FORD CONFIDENTIAL

Revision History

Date	Ver	Notes	
April 3, 2018	**1.0**	**Initial Release**	
September 4, 2018	**1.1**	**Updated Release**	
	IPPT-SD-REQ-304274/B-Application IPPT Request		MBORREL4: Updated diagram
	STR-523925/B-Requirements		MBORREL4: Added REQ-322262, REQ-322263
	IPPT-REQ-304250/B-IPPT FTCP response		MBORREL4: Updated content (added Error codes table)
	IPPT-REQ-304251/B-IPPT FTCP response parameters		MBORREL4: Updated table
	IPPT-REQ-322262/A-Token revocation request		MBORREL4: New req.
	IPPT-REQ-322263/A-Token revocation response		MBORREL4: New req.

Table of Contents

1 Overview

IP Based Pass through works with Wireless Interface Router in the ECG, TCU, SYNC and with an authorization/policy management application in the Ford IPPT Cloud. These will be the key components to provide session authorization, management, and authentication for this service. Once implemented, this service can be used by any Ethernet connected service within Cluster, ADAS, VDS etc. that requires an off board connection to a 1st, 2nd, or third party destination address.

1.1 Terminology and Abbreviations

The following table lists terminologies that are used in this document along with a brief description.

Term	Description
CAN	Controller Area Network
ECG	Enhanced Central Gateway
ECU	Electronic Control Unit
FNV	Fully Networked Vehicle
FTCP	Ford Telematics Control Protocol
GRE	Generic Routing and Encapsulation
HMI	Human Machine Interface
IPC	Inter Process Communication
IPPT	IP Pass Through
SDN	Software Delivery Network
SoA	Service Oriented Architecture
TCU	Telematics Control Unit
WIR	Wireless Interface Router
WLAN	Wireless Local Area Network

2 Architectural Design

2.1 IPPT-CLD-REQ-304022/A-IP Pass Through Server

The IP Pass Through Server (IPPTServer) is responsible for the tasks listed below:

- Interfaces with IPPTClient to receive application requests
- Interfaces with IPPTOffBoardClient to request and receive tokens
- Performs transaction logging for diagnostics purposes

Please review the implementation guide/ block diagram to locate the IPPTServer class.

2.2 IPPT-CLD-REQ-304020/A-IP Pass Through Client

The IP Pass Through Client (IPPTClient) is responsible for the tasks listed below:

- Interfaces with applications ~~via WIR~~ to receive requests and provide responses
- Interfaces with IPPTServer to receive token response from IPPTOffBoardClient

Commented [KY(1]: Delete

Please review the implementation guide/ block diagram to locate the IPPTClient class.

2.3 IPPT-CLD-REQ-304238/A-IP Pass Through OffBoard Client

The IP Pass Through OffBoard Client (IPPTOffBoardClient) is responsible for the tasks listed below:

- Interfaces with IPPTServer to receive token requests
- Performs policy validations
- Interfaces with 3rd party to receive the authentication tokens

Please review the implementation guide/ block diagram to locate the IPPTOffBoardClient class.

2.4 Physical Mapping of Classes

The table below shows an example of how the logical classes that make up the IPPT feature may be mapped into physical modules. This mapping example is specific to the FNV2 architecture and does not necessarily carryover to other carlines or vehicle architectures.

Logical Class	Physical Module (ECU)
IPPTServer	ECG
IPPTClient	ECG, SYNC, TCU
IPPTOffBoardClient	Ford Cloud or 3rd Party

2.5 IPPTClient Interface

2.5.1 IPPT-IIR-REQ-304023/A-IPPTClientInterface_Tx

The IPPTClientInterface_Tx represents all the IPPT feature related signals sent by the IPPTClientInterface object. The below table represents the mapping of the logical signal names (as described in this specification) to the global GSDB signal names.

Logical Signal Name	Parameter Name	GSDB Signal Name
AutosarNM	Control	TCU_AutoSarNMControl APIM_AutoSarNMControl
	NodeID	TCU_AutoSarNMNodeId APIM_AutoSarNMNodeId
	NMReserved1	TCU_AutoSarNMReserved1 APIM _AutoSarNMReserved1
	NMReserved2	TCU_AutoSarNMReserved2 APIM _AutoSarNMReserved2
	NMReserved3	TCU_AutoSarNMReserved3 APIM _AutoSarNMReserved3
	NMReserved4	TCU_AutoSarNMReserved4 APIM_AutoSarNMReserved4
	GWNMProxy	TCU_GWNMProxy APIM_GWNMProxy
	GWOnBoardTester	TCU_GWOnBoardTester APIM_GWOnBoardTester

Note: GSDB signal names are reference only. The Global Signal Database (GSDB) is the master for all signals. If there is a conflict, bring to the module D&R's attention.

2.5.1.1 MD-REQ-304019/A-AutosarNM

Message Type: Status

Autosar signal used to wake up the CAN bus.

Name	Literals	Value	Description
Control	-	-	-
		0x00-0xFF	
NodeID	-	-	-
		0x00-0xFF	
NMReserved1	-	-	-
		0x00-0xFF	
NMReserved2	-	-	-
		0x00-0xFF	
NMReserved3	-	-	-
		0x00-0xFF	
NMReserved4	-	-	-
		0x00-0xFF	
GWNMProxy	-	-	-
		0x00-0xFF	
GWOnBoardTester	-	-	-
		0x00-0xFF	

2.5.2 IPPT-IIR-REQ-304024/A-IPPTClientInterface_Rx

The IPPTClientInterface_Rx represents all the IPPT feature related signals received by the IPPTClientInterface object. The below table represents the mapping of the logical signal names (as described in this specification) to the global GSDB signal names.

Logical Signal Name	Parameter Name	GSDB Signal Name

Note: GSDB signal names are reference only. The Global Signal Database (GSDB) is the master for all signals. If there is a conflict, bring to the module D&R's attention.

3 Functional Definition

3.1 IPPT-FUN-REQ-304265/A-Local Handler

3.1.1 Requirements

3.1.1.1 IPPT-REQ-304266/A-Local Handler in IPPTClient

Each IPPTClient shall contain a Local Handler.

3.1.1.2 IPPT-REQ-304239/A-IPPTClient receive request

The IPPTClient Local Handler shall be able to receive requests from application ~~via WIR~~

~~*3.1.1.3 IPPT-REQ-304240/A-Token required field*~~

~~The IPPTClient Local Handler shall process requests only if Token required field is set to True by the requesting application~~

~~*3.1.1.4*~~*3.1.1.3 IPPT-REQ-304241/A-IPPTClient passing request to IPPT Server*

The IPPTClient Local Handler shall pass Token requests to the IPPTServer Central Handler

~~*3.1.1.5*~~*3.1.1.4 IPPT-REQ-304242/A-IPPTClient passing response back to application*

The IPPTClient Local Handler shall pass Token response received from IPPTServer Central Handler to application ~~via WIR~~

~~*3.1.1.6*~~*3.1.1.5 IPPT-REQ-304243/A-IPPTClient request validation - Error*

The IPPTClient Local Handler shall validate the application request and shall return an error to the application ~~via WIR~~ if there is any error in the token request parameter

~~*3.1.1.7*~~*3.1.1.6 IPPT-REQ-304244/A-IPPTClient request validation – Unique ID*

The IPPTClient Local Handler shall validate the application request and shall return an unique ID to the application ~~via WIR~~ if there is no error in the token request parameter
The requesting application shall be able to track the request via the unique ID parameter.

3.1.2 Use Cases

3.1.2.1 IPPT-UC-REQ-304269/A-Token Request From Application

Actors	WIR, IPPTServer, IPPTClient, IPPTOffBoardClient
Pre-conditions	~~1.~~ Application sends ~~a~~ token request to ~~WIR with mentioning Token request as Yes~~IPPT Client ~~2.~~1. ~~WIR passes the request to IPPTClient~~ ~~3.~~2. The IPPTClient generates unique ID and responds to application ~~4.~~3. The IPPTServer receives the request from IPPTClient and sends the request to IPPTOffBoardClient via FTCP ~~5.~~4. The IPPTOffBoardClient sends the request to end point and receives the token details ~~6.~~5. The IPPTOffBoardClient sends the response as a FTCP message ~~7.~~6. IPPTServer receives the FTCP message, process the same ~~8.~~7. IPPTServer with IPPTClient sends the token response information to the requesting application
Scenario Description	Application requests token
Post-conditions	Application uses the token provided by IPPT to access end point URL
Interfaces	
Notes	Exception use cases

	1 - Token request invalid parameters 2 - No token received from IPPTOffBoardClient

3.1.2.2 IPPT-UC-REQ-304270/A-Exception 1 – Token Request Invalid Parameters

Actors	WIR, IPPTClient
Pre-conditions	1. Application sends a request to ~~WIR with mentioning Token request as Yes~~IPPTClient ~~2. WIR passes the request to IPPTClient~~ ~~3.~~2. IPPTClient returns an error back to the requesting application if there is invalid parameter
Scenario Description	Application sends a token request with invalid parameters
Post-conditions	The application shall process the error message and resend another request
Interfaces	
Notes	

3.1.2.3 IPPT-UC-REQ-304271/A-Exception 2 – No Token Received From IPPTOffBoardClient

Actors	WIR, IPPTServer, IPPTClient, IPPTOffBoardClient
Pre-conditions	~~1.~~ Application sends a request ~~to WIR with mentioning Token request as Yes~~ ~~2.~~1. ~~WIR passes the request~~ to IPPTClient ~~3.~~2. The IPPTClient generates unique ID and responds to application ~~4.~~3. The IPPTServer receives the request from IPPTClient and sends the request to IPPTOffBoardClient via FTCP ~~5.~~4. The IPPTOffBoardClient sends the request to end point and receives no response after all retries ~~6.~~5. The IPPTOffBoardClient notifies this back to the vehicle via an FTCP message ~~7.~~6. The IPPTClient notifies the application of the lack of response
Scenario Description	Application requests token but end point (IPPTOffBoardClient) fails to respond
Post-conditions	A defect log is created for the end point URL
Interfaces	
Notes	

3.1.3 White Box View

3.1.3.1 Sequence Diagrams

3.1.3.1.1 IPPT-SD-REQ-304274/B-Application IPPT Request

Constraints

Pre-Condition

Vehicle is ON

Scenarios

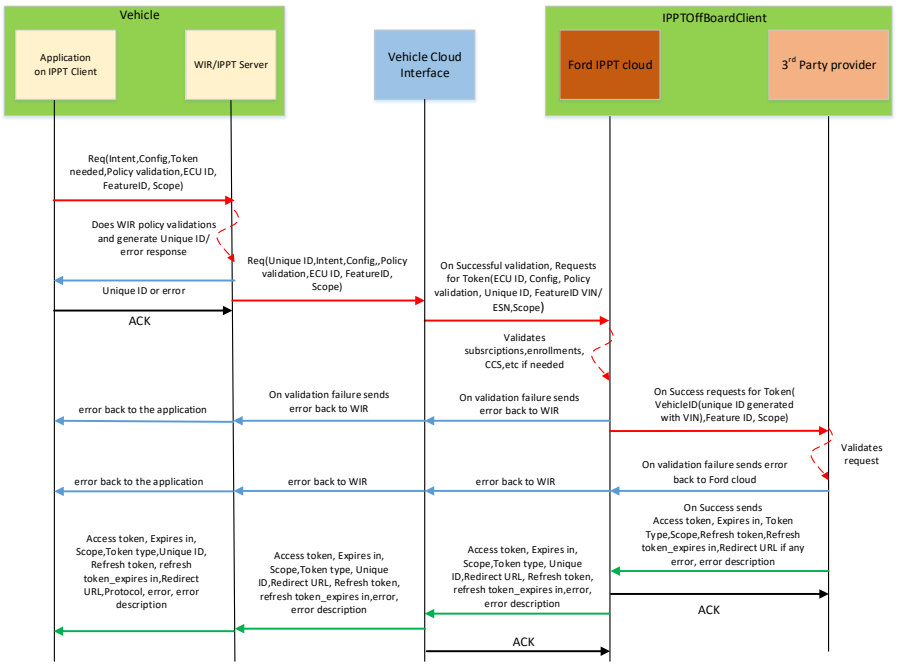
Normal Usage

Application requests token

Post-Condition

Application uses the token provided by IPPT to access end point URL

Sequence Diagram



3.2 IPPT-FUN-REQ-304260/A-Central Handler

3.2.1 Requirements

3.2.1.1 IPPT-REQ-304314/A-Central Handler in IPPTServer

The IPPTServer shall contain the Central Handler.

3.2.1.2 IPPT-REQ-304245/A-IPPTServer/Client interaction – request

The IPPTServer Central Handler shall be able to interact with all IPPTClient Local Handlers and shall be able to receive and process token requests.
The IPPTServer Central Handler design shall be flexible to accommodate requests from additional IPPTClient Local Handlers in the future as well.

3.2.1.3 IPPT-REQ-304246/A-IPPTServer/Client interaction – response

The IPPTServer Central Handler shall be able interact with all IPPTClients and shall be able to send token response received from IPPTOffBoardClient to the IPPTClient Local Handlers.
~~The IPPTServer Central Handler design shall be flexible to accommodate request /responses from additional IPPTClient Local Handlers in the future as well.~~

Commented [KY(2]: Redundant from 3.2.1.2

3.2.1.4 IPPT-REQ-304247/A-IPPT FTCP request

The IPPTServer Central Handler shall be able to compose an FTCP message and request for token from the IPPTOffBoardClient
For more details please refer the FTCP protofile

3.2.1.5 IPPT-REQ-304248/A-IPPT FTCP request parameters

The IPPTServer Central Handler shall be able to fill FTCP token request based on the information it received from the application

Request parameters	Data type
Feature ID	String
Unique ID	String
ECU ID	Integer
Policy validation	Boolean
Config key value pair URL key value is a string	~~String~~String array
Scope	String array ~~String / byte array~~

Commented [KY(3]: Should be String array

Commented [KY(4]: Should be String array

For more details please refer the FTCP protofile

3.2.1.6 IPPT-REQ-304249/A-IPPT FTCP request ECU ID

The IPPTServer Central Handler shall be able to fill the appropriate ECU ID based on which ECU the request originated

3.2.1.7 IPPT-REQ-304250/B-IPPT FTCP response

The IPPTServer Central Handler shall be able to decode a token response FTCP message and send the token response to the requesting application ~~via WIR~~. In case of failure, IPPTServer Central Handler shall send an appropriate error code to the application.

Token Error codes	Error message/ Description
PAYLOAD_ERROR	Mandatory Token fields are missing
INVALID_URL	URL in the Config is not located
SUBSCRIPTION_EXPIRED	Subscription got expired

NOT_ENROLLED	Feature Not enrolled
INVALID_CSS	Invalid CCS
EXPIRED_SUBSCRIPTION_ AND_NOT_ENROLLED	Subscription got expired and Not enrolled
EXPIRED_SUBSCRIPTION_ AND_INVALID_CCS	Subscription expiration and Invalid CCS
NOT_ENROLLED_AND_ INVALID_CCS	Not enrolled and Invalid CCS
EXPIRED_SUBSCRIPTION_ NOT_ENROLLED_AND_ INVALID_CCS	Subscription expiration, Not enrolled and Invalid CCS
POLICY_VALIDATION_SYSTEM_DOWN	CVFMA/SuMo/CCS down – Unable to check subscription, enrollment and/or CCS
PROVIDER_SYSTEM_DOWN	Content Provider system down
IPPT_CLOUD_SYSTEM-DOWN	IPPTOffBoardClient system down
PROVIDER_TOKEN_REFUSAL	Refusal from content provider for a Token
OTHER_ERRORS	All other Errors - will be defined later

For more details about FTCP message please refer the FTCP protofile

3.2.1.8 IPPT-REQ-304251/B-IPPT FTCP response parameters

Response parameters	Data type
Access Token	String
Expires_in	Integer
Token Type	String
Refresh Token	String
Unique ID	String
Error (optional)	String
Error Description (optional)	String
Scope (optional)	String array
Redirect URL(optional)	String
Refresh Token_expires in (optional)	Integer

3.2.1.9 IPPT-REQ-304252/A-IPPTOffBoardClient response correlation with application request

Both IPPTServer Central Handler and IPPTClient Local Handler shall be able to correlate an application request and appropriate IPPTOffBoardClient response by means of using the unique ID which acts as a transaction ID.

3.2.1.10 IPPT-REQ-304253/A-IPPTServer Logging

The IPPTServer shall log all requests and response for a period of IPPT_LOGS_STORAGE_TIME

3.2.1.11 IPPT-REQ-304254/A-On demand diagnostics logs

Upon request from IPPTOffBoardClient the IPPTServer shall push the stored diagnostic logs to the IPPTOffBoardClient via diagnostics framework

3.2.1.12 IPPT-REQ-322262/A-Token revocation request

The IPPTServer shall be able to receive the Token revocation request from IPPTOffBoardClient. Upon receiving the token revocation request command the IPPTServer shall send an ack (command response) with status (in progress / failure) back to the IPPTOffBoardClient. ~~Additionally~~Additionally, with help from IPPTClient the IPPTServer shall send the token revocation request to the application based on the ~~app ID~~Feature ID present in the token revocation request. The token revocation request shall be per application.

For more information please refer the FTCP protofile.

3.2.1.13 IPPT-REQ-322263/A-Token revocation response

Once application successfully sends the revocation response (success / failure) back to the IPPTClient, the IPPTServer shall convey this information back to the IPPTOffBoardClient via Alert.

Based on the response from the application, the token revocation response Alert shall indicate:

0 – Success (Token successfully revoked for the ~~app ID~~Feature ID)
1 – Failure (No response from the application)

If no response is received from the application, the IPPTServer shall retry 5 times and if there is no response shall return "1 – Failure" to the IPPTOffBoardClient ~~application~~.

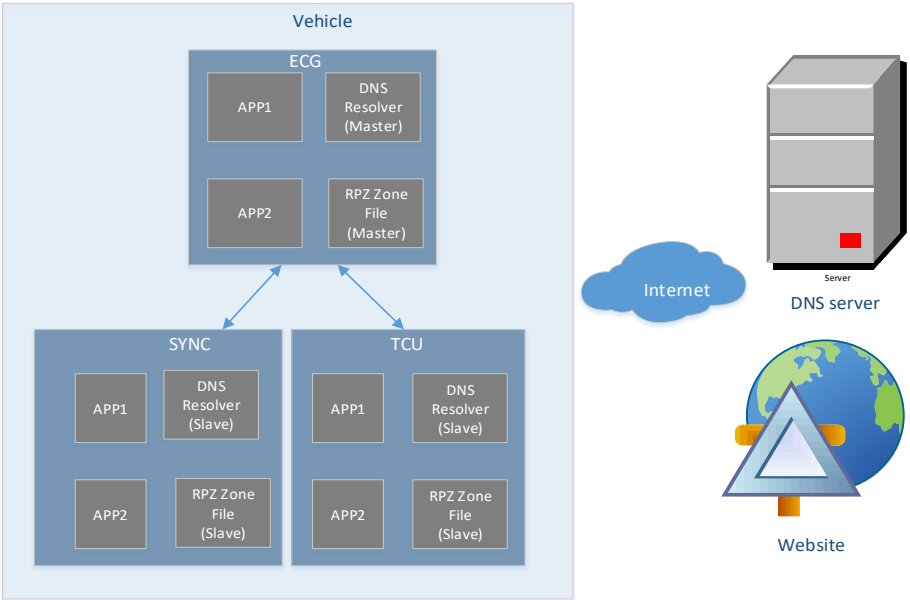
Commented [KY(5]: Should be IPPTOffBoardClient

For more information please refer to the FTCP Protofile.

~~*IPPT-REQ-xxxxxx/A-DNS Zone file*~~

3.2.1.14 IPPT-REQ-xxxxxx/A-Configure DNS Server

The current DNS Server on ECG shall be leveraged to configure Policy Zone files.
DNS Resolver shall be leveraged to apply the set of whitelisting rules implemented in the RPZ file



Formatted: Normal
Formatted: Font: Bold, No underline
Field Code Changed

3.2.1.15 IPPT-REQ-xxxxxx/A-RPZ Zone file

The Current DNS server on ECG shall be leveraged to configure RPZ Zone file. RPZ Zone file consists of a policy file with whitelist of URL's and Blacklist if needed
There can be number of Zone files based on number of applications or just a single file

Note: Current software supports 32 zone files for better performance.

3.2.1.16 IPPT-REQ-xxxxxx/A-Maintain Whitelist Domain

DNS Resolver in ECG shall maintain a list of approved domains that the system, feature, and application may connect to using Response Policy Zones. Only connections to domains on the whitelist shall be resolved. All redirect attempts shall be reconciled against the whitelist. If a requested domain is not on the whitelist, the system shall not permit the connection to be made by returning NXDOMAIN. All connection approvals, request redirects, and connection denials shall be logged and reported in an auditable manner.
All the applications that go through WIR/IPPT shall provide the list of domains that they wanted to connect for content and that list shall be used by DNS RPZ for whitelisting

3.2.1.17 IPPT-REQ-xxxxxx/A-Storing Base domain Whitelist locally

The base whitelist shall be in a write-protected location on the gateway. The base domain whitelist shall be stored locally to always make available to the system
The base whitelist shall include core Ford and SDN domains. These domains shall be the first set of domains in the whitelist file.

3.2.1.18 IPPT-REQ-xxxxxx/A-Configure Caching and Forwarding DNS Server

ECG shall configure Caching and Forwarding DNS Server. ECG shall be the primary DNS server and TCU, SYNC shall be secondary DNS server (when ECG is not available)

3.2.1.19 IPPT-REQ-xxxxxx/A-Maintain Blacklist Domain

For exceptional use case like an application having unlimited number of URL's,
DNS Resolver shall maintain a Blacklist domain against which DNS is resolved

3.2.1.20 IPPT-REQ-xxxxxx/A Forwarding requests to DNS entities

If the domains are not present in the blacklist, DNS Resolver in ECG shall forward requests to approved DNS entities

3.2.1.21 IPPT-REQ-xxxxxx/A-logging and Auditing

All connection Approvals, redirect requests and connection denials shall be logged and reported in an Auditable manner
It shall log security related events in order to troubleshoot defects and trace network

Note: Configuration file in Bind9 shall need to be updated.

3.2.1.22 IPPT-REQ-xxxxxx/A-Updating Whitelist

The Whitelist shall be updated by cloud periodically either for new features or for any security related reasons via OTA Updates ~~or ECU configurations~~

The Whitelist update process shall leverage a secure process and all DNS configuration files shall be reviewed by Ford security team via Jira request process

Formatted: Font: Bold, No underline
Formatted: Normal
Formatted: Indent: Left: 0 cm
Formatted: Font: Bold, No underline
Formatted: Normal
Commented [KY(6]: What is it?
Formatted: Font: Bold, No underline
Formatted: Normal
Commented [KY(7]: What is it?
Formatted: Normal
Formatted: Font: Bold, No underline

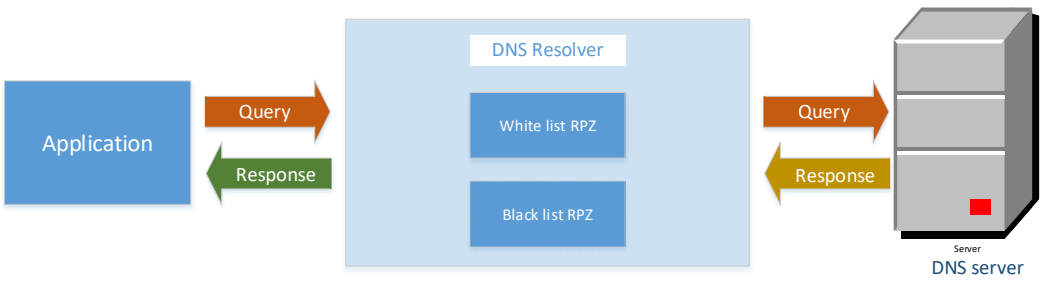
3.2.1.23 IPPT-REQ-xxxxxx/A-Restarting DNS Resolver

DNS Resolver shall be restarted after OTA updates in order to update policy zone file

3.2.2 Use Cases

3.2.2.1 IPPT-UC-REQ-XXXXX/A-Configuring DNS Server

Actors	DNS resolver, RPZ file
Pre-conditions	DNS resolver shall already be running and need to implement white listing using RPZ files
Scenario Description	The current DNS server on ECG shall be leveraged to configure policy zone files
Post-conditions	DNS resolver shall be leveraged to apply the set of white listing rules implemented in the RPZ file
Interfaces	
Notes	



3.2.2.2 IPPT-UC-REQ-XXXXX/A-Application requesting for DNS Resolution

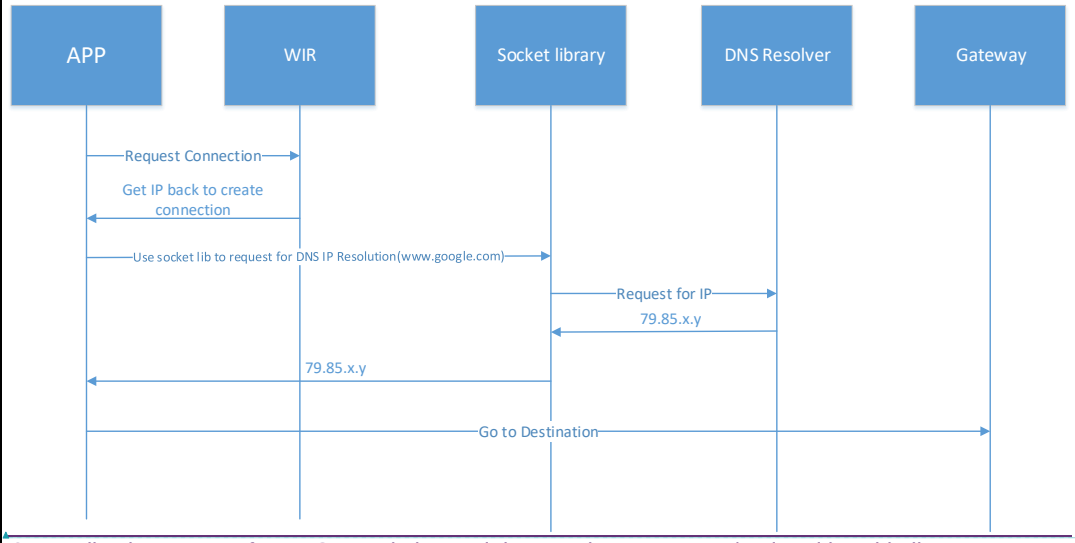
Actors	Application, DNS Resolver
Pre-conditions	Application requests for a DNS query by sending its endpoint URL
Scenario Description	1. Application requests for end point IP address by sending endpoint URL to the DNS Resolver. 2. DNS Resolver has set of white listing rules setup in such a way that it would only resolve the URL into Destination IP if it is present in the White List 3. DNS resolver contacts authoritative DNS to get IP address 4. DNS resolver returns destination IP address or failure
Post-conditions	DNS resolver returns destination IP address or failure
Interfaces	
Notes	

Formatted: Font: Bold, No underline
Formatted: Normal
Formatted: Font: 小四
Formatted: List Paragraph, Numbered + Level: 1 + Numbering Style: 1, 2, 3, … + Start at: 1 + Alignment: Left + Aligned at: 0.11 cm + Indent at: 0.74 cm
Formatted: Font: Bold, No underline
Formatted: Normal
Formatted: List Paragraph, Indent: Left: 0.74 cm
Formatted: Normal
Formatted: Font: 10 pt
Formatted Table
Formatted: Font: 10 pt
Formatted: Font: 10 pt
Formatted: Font: 10 pt
Field Code Changed
Formatted: Normal
Formatted: Font: 10 pt
Formatted: Font: 10 pt
Formatted: Font: (Asian) Calibri
Formatted: List Paragraph, Numbered + Level: 1 + Numbering Style: 1, 2, 3, … + Start at: 1 + Alignment: Left + Aligned at: 0.63 cm + Indent at: 1.27 cm

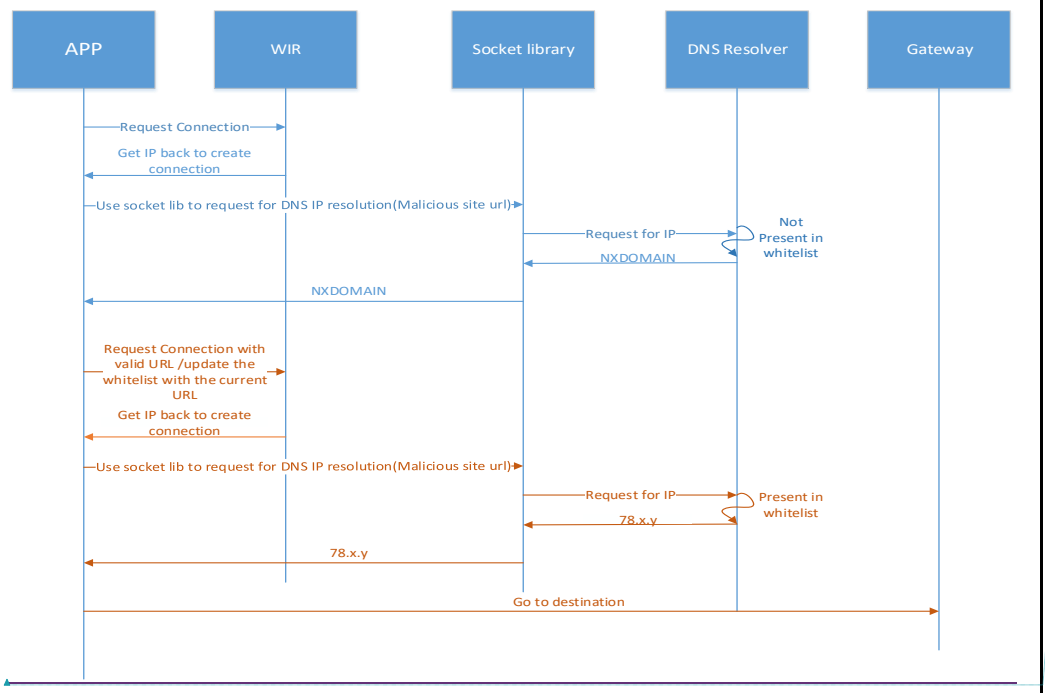
Formatted: Indent: Left: 0.74 cm, No bullets or numbering

1. Application requests for DNS Resolution happy path:

Field Code Changed

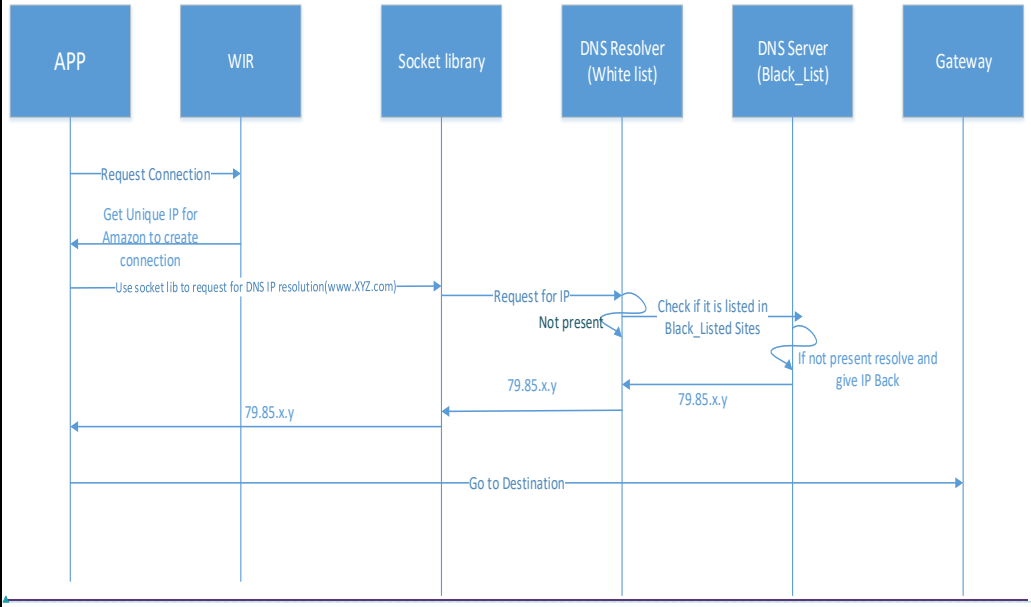


2. Application request for DNS Resolution and the URL is not present /updated in Whitelist:



Field Code Changed

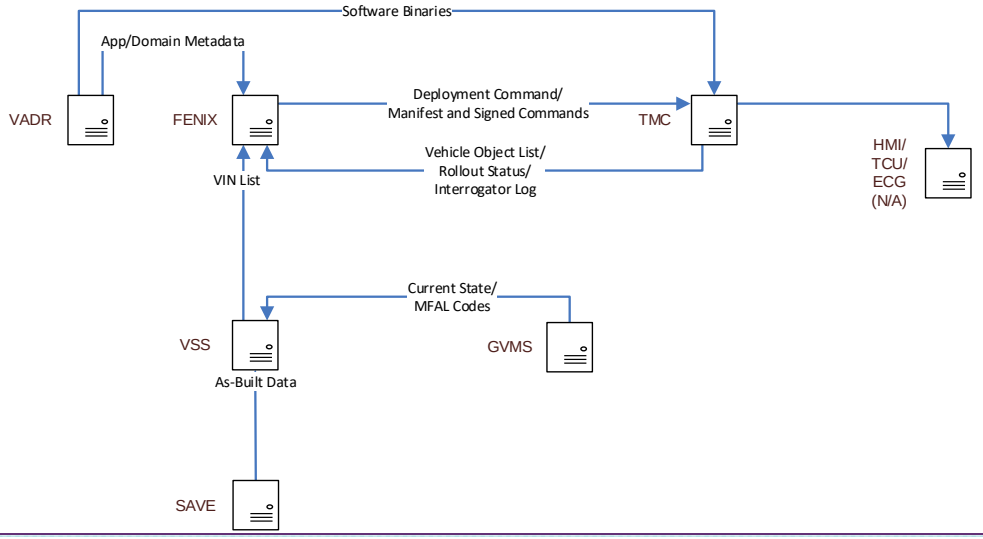
3. Application request for DNS Resolution and it is not having a defined set of whitelist URLs:



3.2.2.3 IPPT-UC-REQ-XXXXX/A-~~Application requesting for DNS Resolution~~Updating URL's

Actors	Application, DNS Resolver- zone file, OTA Update/ECU Configurations
Pre-conditions	Applications destination URL shall be changed, or a new URL gets added
Scenario Description	1. Whenever the application wants to update the URL/ domain it wants to connect to or it wants to connect to a new domain, it shall be updated in DNS Resolver zone file where the whitelist is managed 2. This update can be done as part of ~~or via~~ OTA updates 3. DNS resolver shall be restarted to apply updated policy zone file
Post-conditions	The policy zone file shall be updated with the New URL's
Interfaces	
Notes	

Formatted: Normal
Field Code Changed
Formatted: Font: 10 pt
Formatted: Font: 10 pt
Formatted: Font: 10 pt
Formatted: Font: 10 pt
Formatted: Font: (Asian) Calibri
Formatted: Font: (Asian) Calibri
Formatted: List Paragraph, Numbered + Level: 1 + Numbering Style: 1, 2, 3, … + Start at: 1 + Alignment: Left + Aligned at: 0.63 cm + Indent at: 1.27 cm
Formatted: Font: (Asian) Calibri, Font color: Auto
Formatted: Font: (Asian) Calibri, Font color: Text 1



~~3.2.2~~

3.2.3 White Box View

Formatted: Normal

Field Code Changed

3.3 IPPT-FUN-REQ-304267/A-IPPT Performance

3.3.1 Requirements

3.3.1.1 IPPT-REQ-304255/A-IPPT application request processing

The IPPTClient and IPPTServer shall not add any latency with respect to token generation.

The round trip time from receipt of a request from application to composing an FTCP message and sending to IPPTOffBoardClient shall happen within IPPT_REQUEST_PROCESSING_TIME which is 1 millisecond

3.3.1.2 IPPT-REQ-304256/A-IPPT application response processing

The IPPTClient and IPPTServer shall not add any latency with respect to token response.
The round trip time from receipt of a token FTCP message from IPPTOffBoardClient to composing and sending the token information to requesting application in vehicle shall happen within IPPT_RESPONSE_PROCESSING_TIME which is 1 millisecond

3.3.2 Use Cases

3.3.3 White Box View

3.4 IPPT-FUN-REQ-304268/A-IPPT Configuration

3.4.1 Requirements

3.4.1.1 IPPT-REQ-304257/A-Configuration parameters

Parameter	Description	Tuned Value FoE	Metric	Resolution	Tuning Range
IPPT_LOGS_STORAGE_TIME	Time for which logs will be stored at any point on IPPTServer	43200	Minutes	1	0 - 65535

3.4.2 Use Cases

3.4.3 White Box View

4 Appendix: Reference Documents

Reference #	Document Title
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	