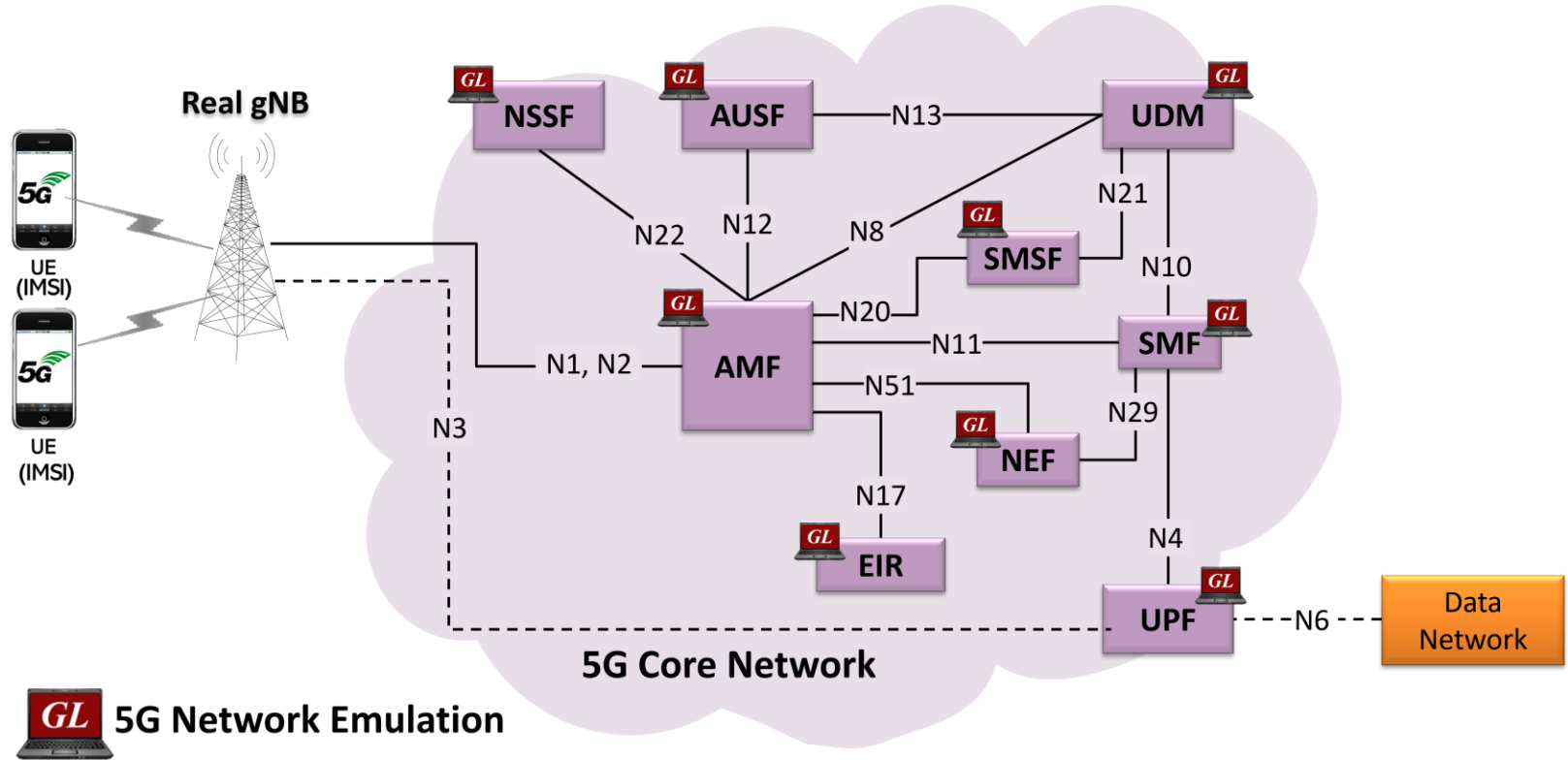

MAPS™ 5G N17 Interface Emulator

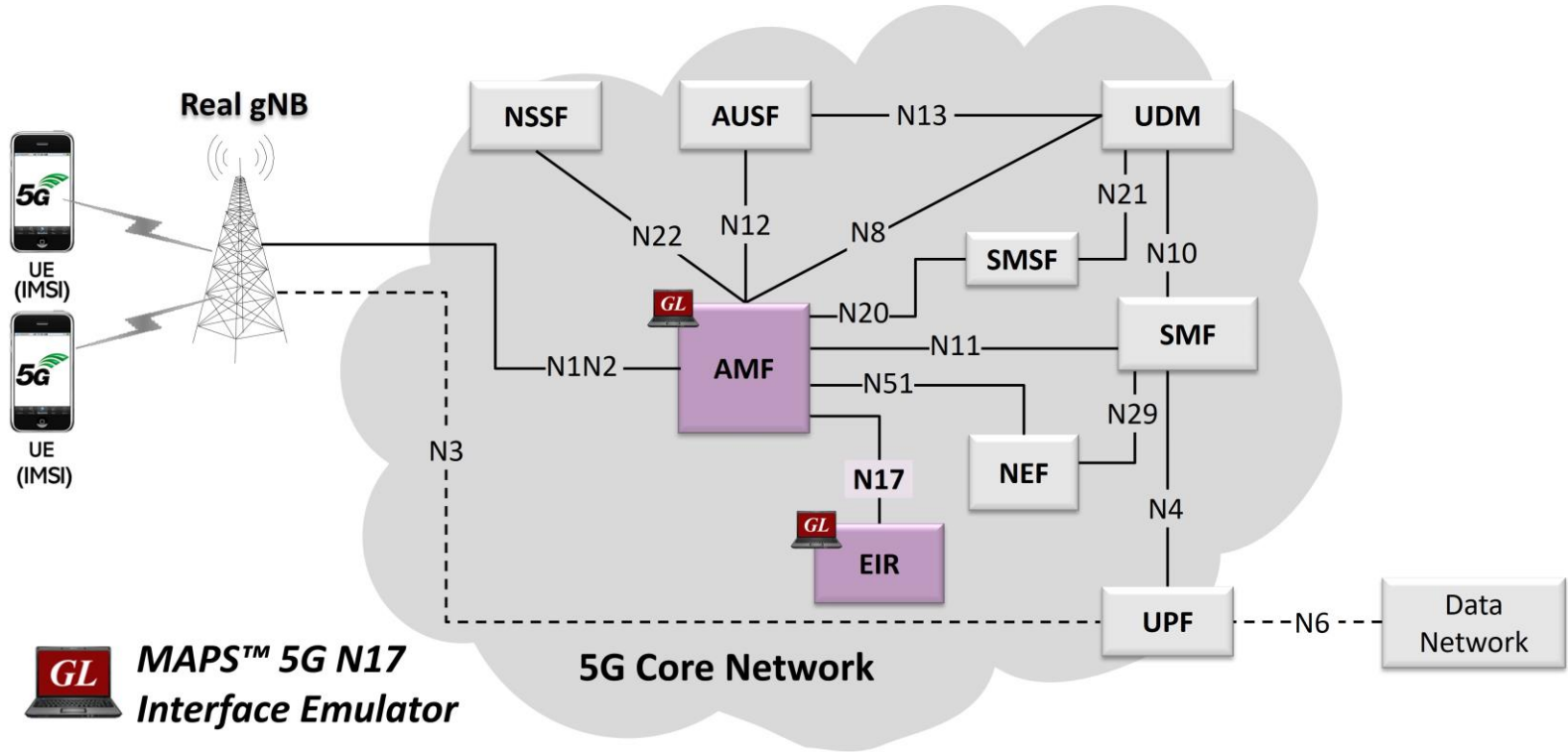


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Website: <https://www.gl.com>

5G Network Diagram



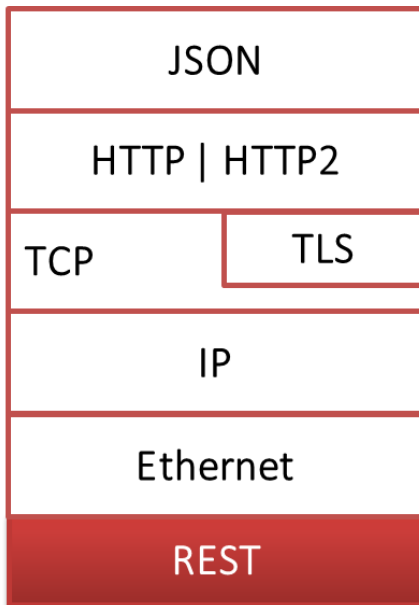
MAPS™ 5G N17 Network Architecture



Main Features

- Emulate Equipment Identity Register (EIR) and Access and Mobility Management Function (AMF) network function
- Supports N5g-eir_EquipmentIdentityCheck Services via the N17 service-based interface
- Services use REST APIs based on HTTP and JSON data format
- Supports TLS and TCP transports
- Supports scripted call generation and automated call reception
- Supports customization of call flow and message templates using Script Editor
- Ready-to-use scripts for quick testing
- Provides Call Statistics and Events Status
- Emulate multiple Subscribers using CSV Profiles
- Automation, Remote access, and Schedulers to run tests 24/7

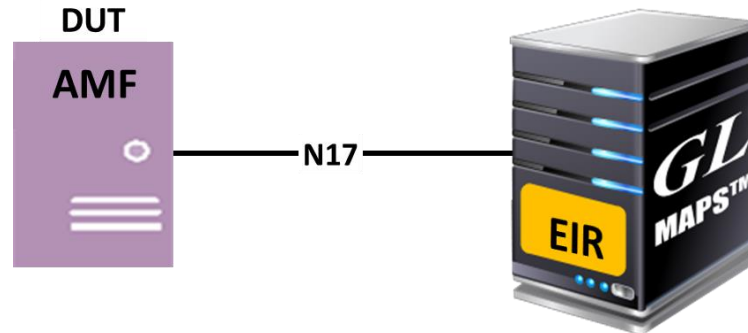
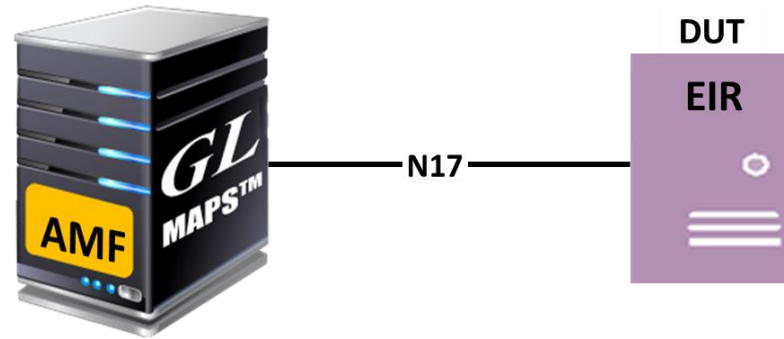
Protocol Stack Specification



Supported Protocols	Standard / Specification Used
N17 Interface (EIR)	3GPP TS 29.511 V17.2.0
JavaScript Object Notation (JSON)	IETF RFC 8259
HTTP	IETF RFC 7231
HTTP / 2	IETF RFC 7540/RFC 7541
TLS	IETF RFC 8446
TCP	IETF RFC 793
IPv4	IETF RFC 791 [5] IETF RFC 2460 [6]

MAPS™ 5G N17 Use Cases

- MAPS™ can emulate any one node (EIR/AMF) or both EIR and AMF nodes



Testbed Setup (EIR)

GL MAPS EIR (N17 RELEASE15)

Configurations Emulator Reports Editor Debug Tools Windows Help

Testbed Setup -TestBedDefault

Config	Value	<input checked="" type="checkbox"/> Enable
N5G EIR		
N5g EIR IP Address	192.168.1.31	
N5g EIR Port	33320	
URI Scheme	HTTP	
N5g EIR API Version	v1	
UE Simulation Parameters		
Type Of UE Simulation	Profiles	
End User Configuration	UE_Profiles.xml	
Auto Generated Users Info		
Starting IMEI	359877068325248	
Starting IMEISV	1234567890123001	

Start Edit

Initialise

Testbed Setup (AMF)

GL MAPS AMF (N17 RELEASE15)

Configurations Emulator Reports Editor Debug Tools Windows Help

Testbed Setup - TestBedDefault

Config	Value	<input checked="" type="checkbox"/> Enable
AMF		
AMF IP Address	192.168.1.31	
AMF Port	22550	
URI Scheme	HTTP	
N5G EIR Configuration		
N5g EIR IP Address	192.168.1.31	
N5g EIR Port	33320	
N5g EIR API Version	v1	
UE Simulation Parameters		
Type Of UE Simulation	Profiles	
End User Configuration	UE_Profiles.xml	
Auto Generated Users Info		
No Of Users To Be Si...	4000	
Starting IMSI	001013012041631	
Starting IMEI	359877068325248	
Auto Generated End ...	AutoGeneratedUs...	

Initialisa

Profile Editor (EIR)

MAPS EIR (N17 RELEASE15)

Configurations Emulator Reports Editor Debug Tools Windows Help

Profile Editor -UE_Profiles

#	Profiles (Edit-F2)	Config	Value	Enable
1	UEProfile0001	UEProfile0001		<input checked="" type="checkbox"/>
2	UEProfile0002			
3	UEProfile0003			
4	UEProfile0004			
5	UEProfile0005			
6	UEProfile0006			
7	UEProfile0007			
8	UEProfile0008			
9	UEProfile0009			
10	UEProfile0010			
11	UEProfile0011			
12	UEProfile0012			
13	UEProfile0013			
14	UEProfile0014			
15	UEProfile0015			
16	UEProfile0016			

Subscriber Info

- IMEI: 359877068325248
- IMEISV: 1234567890123001
- IMSI: 001013012041631
- MSISDN: 3012041631

Equipment Status: WHITELISTED

Initialisation Errors Error Events

Profile Editor (AMF)

GL MAPS AMF (N17 RELEASE15)

Configurations Emulator Reports Editor Debug Tools Windows Help

Profile Editor -UE_Profiles

#	Profiles (Edit-F2)	Config	Value	Enable
1	UEProfile0001	UEProfile0001		<input checked="" type="checkbox"/>
2	UEProfile0002			
3	UEProfile0003			
4	UEProfile0004			
5	UEProfile0005			
6	UEProfile0006			
7	UEProfile0007			
8	UEProfile0008			
9	UEProfile0009			
10	UEProfile0010			
11	UEProfile0011			
12	UEProfile0012			
13	UEProfile0013			

Subscriber Info

- IMEI: 359877068325248
- IMEISV: 1234567890123001
- IMSI: 001013012041631
- MSISDN: 3012041631

Include SUPI or GPSI Equipmen... None

Initialisation Errors Error Events Capturec

Global Configuration

MAPS EIR (N17 RELEASE15) - [Global Configuration -Globalprofile]

Configurations Emulator Reports Editor Debug Tools Windows Help

Global Configuration

Config	Value
Global Configuration	
└─ Equipment Status for Auto Generated... WHITELISTED	

Enable

Apply Edit

Initialisation Errors Error Events

Call Generation

Sr ...	Script Name	Profile	Call Info	Script Execution	Status	Events	Events Profile	Result	Total Iterations	Completed..
1	N5g-eir_AMF_Control.gls	UEProfile0001	359877068325248	Start	WHITELISTED	None		Pass	1	1
2	N5g-eir_AMF_Control.gls	UEProfile0002	359877068325249	Start	WHITELISTED	None		Pass	1	1

AMF EIR

GET /n5g-eir-eic/v1/equipment-status?pei=imei-359877068325248 16:44:44.367000

200 OK 16:44:44.389000

Status: 200
:status : 200
content-type : application/json
content-length : 24

```
{  
  "status": "WHITELISTED"  
}
```

Call Reception

GL MAPS EIR (N17 RELEASE15) - [Call Reception]

Configurations Emulator Reports Editor Debug Tools Windows Help

Sr No	Script Name	Profile	Call Info	Script Execution	Status	Events	Events Profile	Results
1	N5g-eir_Control.gls		imei-359877068325248	Completed	WHITELISTED	None		Pass
2	N5g-eir_Control.gls		imei-359877068325249	Completed	WHITELISTED	None		Pass

Stop Stop All Abort Abort All Show Records Select Active Call Auto Trash Trash

Save Column Width Show Latest

AMF EIR

GET /n5g-eir-eic/v1/equipment-status 16:44:44.379000

200 16:44:44.380000

Find

```
Status: 200
content-type : application/json

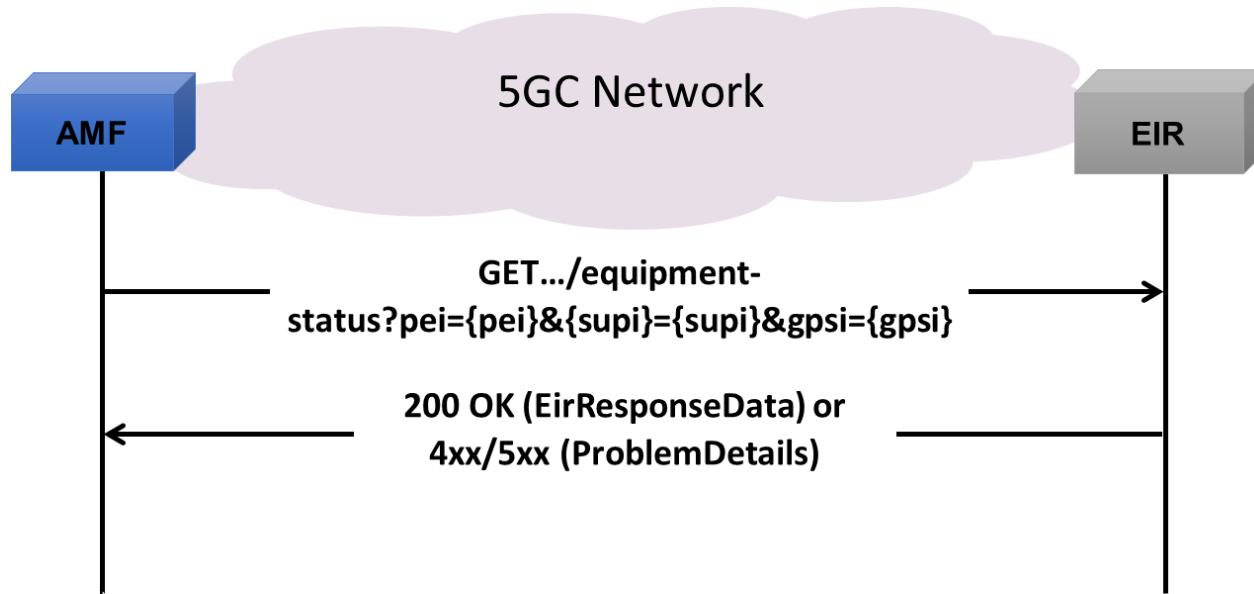
{
  "status": "WHITELISTED"
}
```

Scripts Message Sequence Event Config Script Flow

Initialisation Errors Error Events Captured Errors Lir

MAPS™ 5G N17 Interface Procedure

N5g-EIR_EquipmentIdentityCheck Service



Thank you