IMS Registration (IMS Registration for an Unauthenticated User)       Visited Network     Internet     Home Network										EventStudio Sustam Decimes 4.0
User Equipment	Visited Network  Visited CN		sited IMS	DNS Serv		Home IMS			Home CN	EventStudio System Designer 4.0
Subscriber	SGSN GO	GSN	P-CSCF	DNS Serv	er I-C	SCF	S-C	SCF	HSS	24-Nov-07 18:36 (Page 1)
·	iagram describes the IN	· ·		inal. The IMS	S registration	n goes through t	he following seq	uence:		
(1) GPRS Attach	: The terminal registers	to the GPRS	Network.							
(2) PDP Context	Activation: An IP addre	ess is assigne	d to the tern	ninal.						
	ited IMS Registration A	·		•	J	· ·	•	work to au	ıthenticate itse	elf.
	ty Association Establish			•						
	d IMS Registration: Reg									All Division in the second sec
This sequence d GPRS Attach	lagram was generated v	with EventStu	dio System	Designer 4.0	) (http://www	v.EventHelix.com	/EventStudio). C	Copyright	2007 Eventi	Helix.com Inc. All Rights Reserved.
GMM Attac	h Request									The terminal powers up and attaches to the
GMM Atta	ch Accept									GPRS network.
GMM Attac	<u> </u>									
PDP Context Ac	<b></b>									
Activate P										Once the attach is completed, the terminal
	Create PDP Context	Request								initiates a PDP context activation.
	Create PDP Context									
	Context Accept									The terminal receives an IP address for the PD
P-CSCF IP										context. The terminal also receives the IP address of the P-CSCF. The P-CSCF serves as
										the initial SIP proxy into the IP Multimedia System (IMS).
	IMS Registration Atten	npt								The D CCCC ID address abbeined from the DDI
Store P-CSCF IP A										The P-CSCF IP address obtained from the PDP Context Accept message is stored.
Extract user public from ISIM	dentity									The subscriber extracts the user public identify from the ISIM module of the USIM.
allocate Subscriber side clie	nt and									The SIP terminal allocates the subscriber side client and server ports. These ports will be
server ports										included in the REGISTER message sent to the P-CSCF.
REGISTER	REGISTER		<b>→</b>							The subscriber sends a Register message to inform the network that the specified user
Via: SIP/ Route: si Max-Forwa	2.0/UDP UE-IP;branch=0abak p:[P-CSCF-IP], rds: 20,									public identify (myname@mynetwork.com) is available at the IP address indicated in the
To: <sip:< td=""><td>p:name@hims.net&gt;;tag=abbb name@hims.net&gt;, <sip:[ue-ip]>;expires=9000</sip:[ue-ip]></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Contact Header. The User Equipment (UE) also adds a via header to record that the message had traversed the UE. The REGISTER message</td></sip:<>	p:name@hims.net>;tag=abbb name@hims.net>, <sip:[ue-ip]>;expires=9000</sip:[ue-ip]>									Contact Header. The User Equipment (UE) also adds a via header to record that the message had traversed the UE. The REGISTER message
CSeq: 25 Security-		ame private@him	a net							also includes the server and client ports. Note that the message itself is sent on the standard
Content-L		me.privacewiim	s.net,							SIP port 5060. The SIP REGISTER message also includes the
										private identity of the user. This identity will be used by the S-CSCF and HSS to identify the
			DNS	Query						user. The P-CSCF receives the REGISTER message
				hims.net						and uses the DNS to translate from the domain hims.net to the IP address of the home
			DNS Re	esponse						network.
			ip = ICSC	CF-IP						
			REGISTER	REGISTE	$\longrightarrow$					P-CSCF adds a Via header and removes the Route header. The REGISTER message will be
			Via: SIP/ pcscf1.vi Via: SIP/	/2.0/UDP ims.net;branch /2.0/UDP UE-IP	=0aab1.					routed to the IP address obtained from the DN response. Note that the integrity protection flat is set to false to signify that the user has not
			To: <sip:< td=""><td>ards: 19, ip:name@hims.n :name@hims.net <sip:[ue-ip]></sip:[ue-ip]></td><td>&gt;,</td><td></td><td></td><td></td><td></td><td>been authenticated.</td></sip:<>	ards: 19, ip:name@hims.n :name@hims.net <sip:[ue-ip]></sip:[ue-ip]>	>,					been authenticated.
			Call-ID: CSeq: 25		rexpires-9000	Ψ,				
				ation: Digest zate@hims.net		tection:				
						User A	uthorization R	equest		Query the HSS to assign the S-CSCF.
						name.private@hims.				LICC market with the C OCCE.
						S-CSCF Name, S-CSCF Capabilitie	Authorization A	nswer		HSS replies with the S-CSCFs.
					Select	S-CSCF	5			I-CSCF selects the S-CSCF based on the
					Jeicet	REGI	STER			S-CSCF capabilities. The I-CSCF forwards the REGISTER message to
						REGISTER sip:hims. Via: SIP/2.0/UDP	<b>─</b>			the selected S-CSCF.
						icscf1.hims.net;br Via: SIP/2.0/UDP pcscf1.vims.net;br	anch=0aab1,			
						Via: SIP/2.0/UDP U Route: sip:scscf1. Max-Forwards: 18,	hims.net,			
						From: <sip:name@hi To: <sip:name@hims Contact: <sip:[ue- Call-ID: ababab,</sip:[ue- </sip:name@hims </sip:name@hi 	.net>,	) ,		
						CSeq: 25 REGISTER, Content-Length: 0, Authorization: Dig				
						name.private@hims. no	net integrity prot	tection:		
							Multimedia A	uthentica	<b></b> ▶ '	t
							Multimedia A	uthentic		rHSS passes the Random number (RAND), Authentication token (AUT), signed result
							Select Authent	ication vecto	rs	(XRES), Cipher key (CK) and Integrity Key (IK)
							Save the selecte vec		tion	The user is currently not authenticated, so the
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