I-CSCF	Interfa	ces (IMS Registi		an Unauthen	ticated	User)					
Heer	Visited Network Jser Visited CN Visit			Internet fisited IMS DNS Serve		Home Network Home IMS Ho			EventStudio System Designer 4.0		
User Equipm				SILEU IIVIS DINS SELVE				Home CN			
Subscri		SGSN GGS	N P-C	SCF DNS	Server	I-CSCF	S-CSCF	HSS	24-Nov-07 18:36 (Page 1)		
GPRS A				I							
PDP Context Activation											
Unauthenticated IMS Registration Attempt											
				REGI REGISTER sip: Via: SIP/2.0/ pcsofl.vims/ Via: SIP/2.0/ UE-IP;branch= Kap: csip:name@him To: <sip:name@contact: <sip:(ue-ip]> Call-ID: abab Content-Lengt Authorization name.private@ protection: n</sip:(ue-ip]></sip:name@contact: 	<pre>UDP et;branch UDP (abab, 19, s.net>;ta (expires= ab, STER, h: 0, Digest hims.net</pre>	=0aab1, g=abbb, >, 90000, username =			P-CSCF adds a Via header and removes the Route header. The REGISTER message will be routed to the IP address obtained from the DNS response. Note that the integrity protection flag is set to false to signify that the user has not been authenticated.		
						User A	uthorization Requ	iest	Query the HSS to assign the S-CSCF.		
						User A	Authorization Answ	ver	HSS replies with the S-CSCFs.		
					S	elect S-CSCF REGISTER sij Via: SIP/2.1 icscfl.hims Via: SIP/2.1 pcscfl.vims Via: SIP/2.1 pcscfl.vims pcscfl.vims via: SIP/2.1 pcscfl.vims pcscfl.vi	DISTER p:hims.net SIP/2.0, D/UDP net;branch=0aab2, J/UDP net;branch=0aab1, J/UDP n=0abab, acscf1.hims.net, a: 18, ims.net>;tag=abbb, nethims.net>, >> expires=90000, abab, SISTER, pth: 0, nn Digest username = @Aims.net integrity no		I-CSCF selects the S-CSCF based on the S-CSCF capabilities. The I-CSCF forwards the REGISTER message to the selected S-CSCF.		
				401 Una ₩WW-Authentic	ate:	WWW-Authent. nonce=RAND- via: icscfl	authorized		The user is currently not authenticated, so the registration request is rejected. The terminal is challenged to authenticate the user. RAND, AUTN, CK and IK are passed in the WWW-Authenticate header. Pass the message to the P-CSCF. CK and IK are carried in the WMMM Authenticate header.		
				nonce=RAND-AU Via: pcscfl,	ue-ip	κ,			WWW-Authenticate header.		
IPSec S	ecurity	Association Estat	olishment								
Authent	icated I	MS Registration									
				REGI Via: pcscfl U Contact: UE-I Authorization name.private@ response=RES protection: y RES	P ue-serv Digest hims.net integrity	er-port, username =			Pass the REGISTER message to the I-CSCF. This time the Authorization header indicates that integrity protection is enabled.		
						User A	uthorization Requ	iest	Query the HSS to assign the S-CSCF.		
						User A S-CSCF Name S-CSCF Capal		ver	HSS replies with the S-CSCFs.		

User Equipment Visited CN Visited IMS DNS Server Home IMS Home CN Eventstudio system besigner 4.0 Subscriber SGSN GGSN P-CSCF DNS Server I-CSCF S-CSCF HSS 24-Nov-07 18:36 (Page 2) Via: icscf1 pcscf1 The SIP REGISTER message is finally delivered to the S-CSCF. S-CSCF. HSS The SIP REGISTER message is finally delivered to the S-CSCF. Via: icscf1 pcscf1 isserver-Port, Authorization Digest username = name.private@hims.net response.RES Integrity The SIP REGISTER message is finally delivered to the S-CSCF.	I-CSCF Interfaces (IMS Registration for an Unauthenticated User)											
Equipment 24-Nov-07 18:36 (Page 2) Subscriber SGSN GGSN P-CSCF DNS Server I-CSCF S-CSCF HSS 24-Nov-07 18:36 (Page 2) Wia: icscf1 pscf1 UB-IP:UB-Server-Port, Contact: UB-IP uB-server-port, Authorization: Digest username = name.private@hims.net response-RES Integrity protection: yes, RES The SIP REGISTER message is finally delivered to the S-CSCF. 200 OK Via: icscf1, pcscf1, UB-IP:UB-Server-Port The RES and the XRES matched, so the S-CSCF replies with success. 200 OK Via: icscf1, pcscf1, UB-IP:UB-Server-Port The success is relayed back to the P-CSCE	User Visited CN Visited IMS DNS S					Home Network Home IMS Home CN				EventStudio System Designer 4.0		
REGISTER The SIP REGISTER message is finally delivered to the S-CSCF. Via: icscfl pcscfl US-IP:UE-Server-Port, Contact: UE-IP ue-server-port, Authorization Digest username = name, protection: yes, RES 200 OK Via: icscfl, pcscfl, UE-IP:UE-Server-Port 200 OK Via: icscfl, pcscfl, UE-IP:UE-Server-Port 200 OK The RES and the XRES matched, so the S-CSCF replies with success.	Equipment							0005		24-Nov-07 18:36 (Page 2)		
200 OK						REGI Via: icscfl p UE-IP;UE-Serv. Contact: UE-II Authorization name.private@ response=RES protection: y	STER scfl er-Port, ue-server- Digest use: hims.net					
200 OK The success is relayed back to the PCSOF.						Via: icscf1, j	pcscf1,			The RES and the XRES matched, so the S-CSCF replies with success.		
				Via: pc.						The success is relayed back to the p-CSCF.		