

ENR 3.2 AREA NAVIGATION ROUTES

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits or (MOCA) ft AMSL or FL	Direction of cruising levels		Remarks Controlling unit Frequency
				Airspace classification	Odd	Even	
1	2	3	4	5	6		7
<b>L512 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  △ TENAS 373820N 1313427E  △ SABET 373829N 1324019E  ▲ ANDOL(FIR BDRY) 373958N 1330000E	N/A	<u>098</u> 279	52.3	<u>UNL</u> FL 270(1 500) Class A, G	↓		<b>Daegu ACC</b>  FREQ : 122.250(125.925) MHz 263.350(263.85) MHz  Airspace Classification refer to ENR 3.1-1  * L512 OPS HR between TENAS and ANDOL  - EASTBOUND : H24 - WESTBOUND : H24  ** After ANDOL, MEA is FL 290, see AIP JAPAN.  *** Extended DME DOC volume service is 220 NM.
		<u>093</u> 274	15.7				
	INCHEON FIR						
FUKUOKA FIR							
1. Critical DME : KAE<TENAS/SABET>, KPO<TENAS/SABET> 2. DME GAP : SABET/ANDOL, GNSS required.							
<b>Y233 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  △ BUSKO 374033N 1301610E  △ SELPA 375515N 1304911E  △ ONATA 382832N 1320602E  ▲ KANSU(FIR BDRY) 383800N 1322830E	N/A	<u>069</u> 250	30.0	<u>UNL</u> FL 200(1 500) Class A, D, G	↓		<b>Daegu ACC</b>  FREQ : 122.250(125.925) MHz 263.350(263.85) MHz  Airspace Classification refer to ENR 3.1-1
		<u>070</u> 251	69.1				
		<u>071</u> 251	20.0				
INCHEON FIR							
PYONGYANG FIR							
1. Critical DME : KAE<BUSKO/SELPA>, KPO<BUSKO/SELPA>, KAE<SELPA/ONATA>, KPO<SELPA/ONATA> 2. DME GAP : ONATA/KANSU, GNSS required.							

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL	Direction of cruising levels		Remarks Controlling unit Frequency	
				Airspace classification	Odd	Even		
1	2	3	4	5	6		7	
<b>Y253 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  △ DALSU 350731N 1264206E  △ GWANGJU VOR(KWA) 350734N 1264844E  △ SAMUL 350736N 1265154E  ▲ TEDAN 350744N 1271852E  △ ANUBA 350746N 1273523E  ▲ SAPDI 350737N 1282952E  ▲ SARAM 350736N 1283147E  △ ANKUS 350730N 1284616E  △ BUSAN VORTAC(PSN) 350721N 1285958E	N/A						<b>Incheon ACC</b>  FREQ: (at or below FL 255) 120.725(128.30) MHz 263.90(272.75) MHz  FREQ : (above FL 255) 123.725(124.50) MHz 239.25(275.40) MHz  Airspace Classification refer to ENR 3.1-1	
		097 277	5.4	UNL 8 000(2 400) Class A, D, G	↓			
		097 278	2.6	UNL 8 000(2 000) Class A, D, G			<b>Daegu ACC</b>  FREQ : 128.175(128.325) MHz 335.50(275.20) MHz  Airspace Classification refer to ENR 3.1-1	
		097 278	22.1	UNL 8 000(5 200) Class A, D, G				
		098 278	13.5	UNL 8 000(5 400) Class A, D, G				
		098 278	44.7					
		098 278	1.6	UNL 8 000(2 400) Class A, D, G			<b>Daegu ACC</b>  FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz  Airspace Classification refer to ENR 3.1-1	
		098 279	11.9	UNL 8 000(4 000) Class A, D, G				
		099 279	11.2	UNL 8 000(3 500) Class A, D, G		↑		

1. Critical DME : PSN<SAPDI/SARAM>, CJU<SAPDI/SARAM>, PSN<SARAM/ANKUS>, CJU<SARAM/ANKUS>,  
PSN<ANKUS/PSN>, CJU<ANKUS/PSN>

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

\* RNAV2 represents a navigation accuracy of  $\pm 2$  NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL	Direction of cruising levels		Remarks Controlling unit Frequency
				Airspace classification	Odd	Even	
1	2	3	4	5	6		7
<b>Y571 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  ▲ SOSDO 330012N 1262735E  △ OMKIM 331320N 1264114E  △ PAPLU 333441N 1270337E  ▲ AKPON 334650N 1271953E  ▲ NISAV 341519N 1275835E  ▲ ANROD 343758N 1282952E  △ POVEM 345523N 1285416E  △ BUSAN VORTAC(PSN) 350721N 1285958E							<b>Incheon ACC</b>  FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	<u>048</u> 229	17.4	<u>UNL</u> 11 000(1 500) Class A, D, G	↓		
		<u>049</u> 229	28.4	<u>UNL</u> 11 000(2 200) Class A, D, G			
		<u>056</u> 236	18.2	<u>UNL</u> 11 000(1 500) Class A, D, G			
		<u>056</u> 236	42.9	<u>UNL</u> 11 000(1 800) Class A, D, G			
		<u>056</u> 237	34.4	<u>UNL</u> 11 000(2 100) Class A, D, G			
		<u>057</u> 237	26.6	<u>UNL</u> 11 000(2 800) Class A, D, G			
		<u>029</u> 209	12.8	<u>UNL</u> 11 000(3 000) Class A, D, G			
	1. DME GAP : SOSDO/OMKIM, OMKIM/PAPLU, PAPLU/AKPON, AKPON/NISAV GNSS required.						

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Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL Airspace classification	Direction of cruising levels		Remarks Controlling unit Frequency
					Odd	Even	
1	2	3	4	5	6		7
<b>Y572 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  △ BUSAN VORTAC(PSN) 350721N 1285958E  △ OLMUD 350225N 1284916E  ▲ ENGOT 344834N 1282952E  ▲ POVOR 341520N 1274400E  ▲ UPGOS 335733N 1271953E  △ BILUM 334613N 1270439E  △ BEPKO 333910N 1265514E  △ JEJU VORTAC(CJU) 332305N 1263727E  △ OMKIM 331320N 1264114E  ▲ TOSAN 330012N 1264619E  ▲ RUGMA(FIR BDRY) 323012N 1265753E	N/A						<b>Daegu ACC</b>  FREQ : 128.175(128.325) MHz 335.50(275.20) MHz  Airspace Classification refer to ENR 3.1-1
		249 069	10.1	UNL 11 000(3 000) Class A, D, G		↓	
		237 057	21.1	UNL 11 000(3 200) Class A, D, G			<b>Incheon ACC</b>  FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz  Airspace Classification refer to ENR 3.1-1  ※ The cruising levels from CJU to RUGMA are even levels due to operational reasons.  ※ The cruising levels from RUGMA to CJU are odd levels due to operational reasons.
		237 056	50.4	UNL 11 000(2 600) Class A, D, G			
		236 056	26.8	UNL 11 000(2 000) Class A, D, G			
		236 056	17.0	UNL 11 000(1 500) Class A, D, G			
		236 056	10.5	UNL 11 000(1 500) Class A, D, G			
		230 050	21.9	UNL 11 000(5 600) Class A, D, G			
		169 349	10.2	UNL 11 000(8 700) Class A, D, G		↓	
		169 349	13.8	UNL 11 000(1 500) Class A, D, G			
		169 349	31.5	UNL 11 000(1 500) Class A, D, G			
					↑		
INCHEON FIR							
FUKUOKA FIR							

1. DME GAP : UPGOS/BILUM, BILUM/BEPKO, BEPKO/CJU, CJU/OMKIM, OMKIM/TOSAN, TOSAN/RUGMA GNSS required.

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL  Airspace classification	Direction of cruising levels		Remarks  Controlling unit Frequency	
					Odd	Even		
1	2	3	4	5	6		7	
<b>Y579 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  △ TENAS 373820N 1313427E  △ AGSUS 364521N 1304044E  ▲ DABIK 361743N 1301143E  ▲ BULGA 355609N 1294924E  ▲ BEDOM 352513N 1291754E  △ BUSAN VORTAC(PSN) 350721N 1285958E	N/A						<b>Daegu ACC</b>  FREQ : 122.250(125.925) MHz 263.350(263.85) MHz  Airspace Classification refer to ENR 3.1-1	
		<u>228</u> 047	68.1	<u>UNL</u> FL 140(1 500) Class A, D, G	↓			
		<u>229</u> 049	36.2					
		<u>229</u> 048	28.1					
		<u>228</u> 048	40.2	<u>UNL</u> FL 140(2 700) Class A, D, G			<b>Daegu ACC</b>  FREQ : 120.575(119.375, 119.325, 134.375) MHz 254.70(335.75) MHz  Airspace Classification refer to ENR 3.1-1	
		<u>228</u> 047	23.1	<u>UNL</u> FL 140(3 800) Class A, D, G				
1. TENAS-PSN CDR1 Operational hour(UTC) - Weekdays : 1400~2200 - SAT: 2200 on the preceding until 2400 on the Saturday - SUN : 0000~2200 - Holiday : 1400 on the preceding until 2200 on the holiday. Rest of Y579-PERM. See ENR 1.1-1.2.								

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Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL	Direction of cruising levels		Remarks Controlling unit Frequency		
				Airspace classification	Odd	Even			
1	2	3	4	5	6		7		
<b>Y644 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>							<b>Daegu ACC</b>  FREQ : (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz		
SANGHAI FIR							FREQ : (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz  Eastbound (AGAVO-EGOBA) FL 410, FL 390, FL 370, FL 350, FL 330, FL 310, FL 290, FL 270, FL 250, FL 230  REF. ENR 3.1-10 for the detailed altitude conversion procedures.  Airspace Classification refer to ENR 3.1-1		
INCHEON FIR									
▲ AGAVO(FIR BDRY) 371000N 1240000E  △ RILRO 371033N 1241442E  △ GONAV 371048N 1242453E  △ BODOL 371122N 1244954E  ▲ REBIT 371203N 1252913E  △ BELTU 371218N 1254759E  △ BOGAN 371241N 1262812E  ▲ MONSI 371247N 1265015E  △ POLEG 371249N 1265935E  △ EGOBA 372915N 1272246E	N/A	<u>095</u> 276	11.8	UNL FL 150(1 500) Class A, D, G	↓				
		<u>096</u> 276	8.1						
		<u>096</u> 277	20.0						
		<u>097</u> 277	31.4						
		<u>097</u> 278	15.0						
		<u>098</u> 278	32.1	UNL 8 000(2 400) Class A, D, G					
		<u>098</u> 278	17.6	UNL 8 000(3 200) Class A, D, G					
		<u>098</u> 278	7.5	UNL 8 000(2 400) Class A, D, G					
		<u>057</u> 237	24.7	UNL FL 140(3 300) Class A, D, G					
		1. Critical DME : SEL<AGAVO/RILRO>, KUZ<AGAVO/RILRO>, SEL<RILRO/GONAV>, KUZ<RILRO/GONAV>, SEL<MONSI/POLEG>, SOT<MONSI/POLEG>, SEL<POLEG/EGOBA>, SOT<POLEG/EGOBA>							

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Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL  Airspace classification	Direction of cruising levels		Remarks Controlling unit Frequency			
					Odd	Even				
1	2	3	4	5	6		7			
Y655 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]  △ GONAV 371048N 1242453E  △ DALPO 365835N 1242453E  ▲ NONOS 364046N 1242453E  ▲ BIDRI 362007N 1242453E  ▲ DANPA 353036N 1242453E    ▲ PALSA 340131N 1242453E       △ TOLIS 335030N 1242453E    ▲ ENSUM 321302N 1244635E  △ BONSO 302840N 1250851E  ▲ ATOTI(FIR BDRY) 300013N 1251154E	N/A						Daegu ACC  FREQ : (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz  FREQ : (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz  Airspace Classification refer to ENR 3.1-1			
		188 008	12.2	UNL FL 140(1 500)  Class A, D, G	↓			Incheon ACC  FREQ : (below FL 255) 126.175(134.375) MHz 317.85(335.55) MHz  FREQ : (at or above FL 255) 132.15(123.55) MHz 263.15(272.60) MHz  Airspace Classification refer to ENR 3.1-1		
		188 008	17.8							
		188 008	20.6							
		188 008	49.4							
		188 007	88.9							
		187 007	11.0							Incheon ACC  FREQ : (below FL 255) 120.725(128.30) MHz 263.90(272.75) MHz  FREQ : (at or above FL 255) 123.725(124.50) MHz 239.25(275.40) MHz  Airspace Classification refer to ENR 3.1-1
		177 356	99.0	UNL FL 430(1 500)  Class A, G					Incheon ACC  FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz  Airspace Classification refer to ENR 3.1-1	
		176 356	105.9	FL 220 FL 150(1 500)  Class A, D					Incheon ACC  FREQ : (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz  FREQ : (at or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz  Airspace Classification refer to ENR 3.1-1	
		181 001	28.5							
		INCHEON FIR								Airspace Classification refer to ENR 3.1-1
		FUKUOKA FIR								
		1. Critical DME : SEL<GONAV/DALPO>, KUZ<GONAV/DALPO>, SEL<DALPO/NONOS>, KUZ<DALPO/NONOS>, SEL<NONOS/BIDRI>, KUZ<NONOS/BIDRI>, SEL<BIDRI/DANPA>, KUZ<BIDRI/DANPA> 2. DME GAP : DANPA/PALSA, PALSA/TOLIS, TOLIS/ENSUM, ENSUM/BONSO, BONSO/ATOTI GNSS required.								
Y657 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]  △ GWANGJU VOR(KWA) 350734N 1264844E  ▲ IGDOK 353104N 1274907E  △ DALSEONG VORTAC(TGU) 354835N 1283527E	N/A							Incheon ACC  FREQ : (at or below FL 255) 120.725(128.30) MHz 263.90(272.75) MHz  FREQ : (above FL 255) 123.725(124.50) MHz 239.25(275.40) MHz  Airspace Classification refer to ENR 3.1-1		
		072 253	54.7	10 000 8 000(7 100)  Class D	↓			Daegu ACC  FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz  Airspace Classification refer to ENR 3.1-1		
		073 254	41.6	10 000 8 000(4 800)  Class D						

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Change : Page control.



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Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL	Direction of cruising levels		Remarks Controlling unit Frequency				
				Airspace classification	Odd	Even					
1	2	3	4	5	6		7				
<b>Y685 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  △ ANYANG VORTAC(SEL) 372449N 1265542E  △ KALMA 371845N 1270645E  △ KAKSO 370745N 1272637E  ▲ GUKDO 370111N 1273823E  △ ENSAL 365554N 1274747E  △ BASEM 365037N 1275710E  ▲ BIGOB 364325N 1280952E  △ YECHEON VOR(CUN) 363755N 1281931E  △ ELAPI 362014N 1285051E  △ POHANG VORTAC(KPO) 355838N 1292828E  ▲ BULGA 355609N 1294924E  ▲ SAPRA(FIR BDRY) 354926N 1304325E	N/A				↓		<b>Daegu ACC</b>  FREQ: (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz  FREQ: (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz  Only flying westbound from KPO to SEL on Y685 is authorized except ACFT departing from RKTY or RKTl.  Aircraft flying eastbound from SEL to KPO at or above 11 000 ft on Y685 shall get PPR 24 hours before from Incheon/Daegu ACC.  No PPR is needed at or below 10 000 ft.  Airspace Classification refer to ENR 3.1-1				
		133 313	10.7	UNL 8 000(3 200) Class A, D, G							
		133 313	19.3	UNL 8 000(2 900) Class A, D, G							
		133 313	11.5	UNL 8 000(3 600) Class A, D, G							
		133 314	9.2	UNL 8 000(3 700) Class A, D, G							
		134 314	9.2	UNL 8 000(4 000) Class A, D, G							
		134 314	12.5	UNL 8 000(5 000) Class A, D, G							
		134 314	9.5	UNL 8 000(4 900) Class A, D, G							
		133 314	30.8	UNL 8 000(3 800) Class A, D, G							
		134 314	37.3	UNL 8 000(4 700) Class A, D, G							
		107 287	17.2	UNL 8 000(2 100) Class A, D, G							
		107 287	44.4	UNL 8 000(1 500) Class A, D, G							
	INCHEON FIR										
FUKUOKA FIR											

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits	Direction of cruising levels		Remarks Controlling unit Frequency		
				Lower limits (MOCA) ft AMSL or FL  Airspace classification	Odd	Even			
1	2	3	4	5	6		7		
<b>Y697 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>							<b>Daegu ACC</b>  FREQ: (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz		
SANGHAI FIR									
INCHEON FIR									
▲ AGAVO(FIR BDRY) 371000N 1240000E	N/A	064 244	7.5	UNL  FL 150(1 500)  Class A, D, G	↓	↑	FREQ : (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz		
▲ OLBIM 371411N 1240751E		066 246	16.2				Westbound(SEL-AGAVO) FL 400, FL 380, FL 360, FL 340, FL 320, FL 300, FL 280, FL 260, FL 240, FL 220, FL 200		
△ NOGON 372250N 1242505E		097 277	20.0					REF. ENR 3.1-9 for the detailed altitude conversion procedures.	
△ ANSIM 372323N 1245009E		097 277	19.0						Only flying westbound from SEL to AGAVO on Y697 is authorized.
▲ BINIL 372349N 1251359E		097 277	20.0						
▲ NOPIK 372412N 1253905E		097 278	41.0	UNL 8 000(2 100) Class A, D, G					
△ GOGET 372442N 1263036E		098 278	20.0	UNL 7 500(3 400) Class A, D, G					
△ ANYANG VORTAC(SEL) 372449N 1265542E		087 267	22.0	UNL 7 500(5 100) Class A, D, G					
△ EGOBA 372915N 1272246E		087 267	13.9	UNL 7 500(4 500) Class A, D, G					
▲ KARBU 373159N 1273952E		087 268	22.9	UNL 7 500(7 500) Class A, D, G					
▲ TORUS 373625N 1280807E		088 268	21.8	UNL 7 500(7 100) Class A, D, G					
▲ BIKSI 374032N 1283504E		088 268	8.2	UNL 8 000(7 100) Class A, D, G					
△ GANGWON VORTAC(KAE) 374203N 1284514E		130 310	30.0	UNL 9 000(1 500) Class A, D, G					
▲ PILIT 372631N 1291731E		130 310	31.2						
▲ ESNEG 371014N 1295051E		130 310	47.1						
△ AGSUS 364521N 1304044E		130 311	42.9						<b>Daegu ACC</b>  FREQ : 122.250(125.925) MHz 263.350(263.85) MHz  Only flying westbound from LANAT to KAE on Y697 shall get 24HR PPR from Daegu ACC.
▲ LANAT(FIR BDRY) 362224N 1312542E									Airspace Classification refer to ENR 3.1-1
INCHEON FIR									
FUKUOKA FIR									
1. Critical DME : SEL<AGAVO/OLBIM>, KUZ<AGAVO/OLBIM>, SEL<OLBIM/NOGON>, KUZ<OLBIM/NOGON>, SEL<NOGON/ANSIM>, KUZ<NOGON/ANSIM>, SEL<KARBU/TORUS>, KAE<KARBU/TORUS>, SEL<TORUS/BIKSI>, KAE<TORUS/BIKSI>, SEL<BIKSI/KAE>, KAE<BIKSI/KAE>, KAE<KAE/PILIT>, KPO<KAE/PILIT>, KAE<PILIT/ESNEG>, KPO<PILIT/ESNEG>, KAE<ESNEG/AGSUS> KPO<ESNEG/AGSUS> KAE<AGSUS/I ANAT> KPO<AGSUS/I ANAT>									

1. Critical DME : SEL<AGAVO/OLBIM>, KUZ<AGAVO/OLBIM>, SEL<OLBIM/NOGON>, KUZ<OLBIM/NOGON>, SEL<NOGON/ANSIM>, KUZ<NOGON/ANSIM>, SEL<KARBU/TORUS>, KAE<KARBU/TORUS>, SEL<TORUS/BIKSI>, KAE<TORUS/BIKSI>, SEL<BIKSI/KAE>, KAE<BIKSI/KAE>, KAE<KAE/PILIT>, KPO<KAE/PILIT>, KAE<PILIT/ESNEG>, KPO<PILIT/ESNEG>, KAE<ESNEG/AGSUS>, KPO<ESNEG/AGSUS>, KAE<AGSUS/LANAT>, KPO<AGSUS/LANAT>

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Change : Information of remarks(G597 → Y697).

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL  Airspace classification	Direction of cruising levels		Remarks Controlling unit Frequency
					Odd	Even	
1	2	3	4	5	7		10
<b>Y711 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>							<b>Daegu ACC</b> FREQ: (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz
▲ MONSI 371247N 1265015E	N/A	190 010	29.4	UNL FL 140(2 900) Class A, D, G		↓	FREQ: (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz  Airspace Classification refer to ENR 3.1-1
▲ BULTI 364322N 1264930E		187 007	10.0				<b>Incheon ACC</b> FREQ: (at or below FL 255) 126.175(134.375) MHz 317.85(335.55) MHz  FREQ: (above FL 255) 132.15(123.55) MHz 263.15(272.60) MHz  Airspace Classification refer to ENR 3.1-1
▲ MEKIL 363322N 1264953E		187 006	10.2	UNL FL 140(3 200) Class A, D, G			
△ GONAX 362311N 1265016E		193 013	14.1				<b>Incheon ACC</b> FREQ: (at or below FL 255) 120.725(128.30) MHz 263.90(272.75) MHz  FREQ: (above FL 255) 123.725(124.50) MHz 239.25(275.40) MHz  Airspace Classification refer to ENR 3.1-1
△ BEDES 360905N 1264844E		193 013	14.9	UNL FL 140(2 200) Class A, D, G			
△ ELPOS 355410N 1264707E		193 013	24.0	UNL FL 140(2 800) Class A, D, G			<b>Incheon ACC</b> FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz  Airspace Classification refer to ENR 3.1-1
▲ MANGI 353011N 1264432E		193 013	22.7	UNL FL 140(3 800) Class A, D, G			
△ DALSU 350731N 1264206E		193 013	42.4	UNL FL 140(4 000) Class A, D, G			<b>Incheon ACC</b> FREQ: (At or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz  FREQ: (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz  * Note Any aircraft planning to operate below FL 320 after MUGUS must use Z86 between BONSO and ATOTI, then use B576.  Airspace Classification refer to ENR 3.1-1
△ NULDI 342514N 1263739E		193 013	10.0	UNL FL 140(3 300) Class A, D, G			
▲ DOTOL 341515N 1263637E		193 012	24.8	UNL FL 140(2 700) Class A, D, G			<b>Incheon ACC</b> FREQ: (At or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz  FREQ: (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz  * Note Any aircraft planning to operate below FL 320 after MUGUS must use Z86 between BONSO and ATOTI, then use B576.  Airspace Classification refer to ENR 3.1-1
△ KIDOS 335028N 1263402E		207 027	25.9	UNL FL 140(6 000) Class A, D, G			
△ REMOS 332605N 1262329E		207 027	27.4	UNL FL 140(6 300) Class A, D, G			<b>Incheon ACC</b> FREQ: (At or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz  FREQ: (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz  * Note Any aircraft planning to operate below FL 320 after MUGUS must use Z86 between BONSO and ATOTI, then use B576.  Airspace Classification refer to ENR 3.1-1
▲ PANSI 330014N 1261225E		207 027	33.4				
△ DOMKO 322848N 1255859E		207 027	30.1				<b>Incheon ACC</b> FREQ: (At or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz  FREQ: (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz  * Note Any aircraft planning to operate below FL 320 after MUGUS must use Z86 between BONSO and ATOTI, then use B576.  Airspace Classification refer to ENR 3.1-1
△ PONIK 320021N 1254659E		207 026	18.2	UNL FL 140(1 500) Class A, D, G			
△ IKEDO 314314N 1253948E		207 026	12.0				<b>Incheon ACC</b> FREQ: (At or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz  FREQ: (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz  * Note Any aircraft planning to operate below FL 320 after MUGUS must use Z86 between BONSO and ATOTI, then use B576.  Airspace Classification refer to ENR 3.1-1
▲ KANKA 313155N 1253504E		207 026	67.0				
△ BONSO 302840N 1250851E		206 026	30.2				<b>Incheon ACC</b> FREQ: (At or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz  FREQ: (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz  * Note Any aircraft planning to operate below FL 320 after MUGUS must use Z86 between BONSO and ATOTI, then use B576.  Airspace Classification refer to ENR 3.1-1
▲ MUGUS(FIR BDRY) 300006N 1245712E							
INCHEON FIR							Airspace Classification refer to ENR 3.1-1
FUKUOKA FIR							

1. Critical DME : KWA<DOTOL/KIDOS>, CJU<DOTOL/KIDOS>

2. DME GAP : KIDOS/REMOS, REMOS/PANSI, PANSI/DOMKO, DOMKO/PONIK, PONIK/KANKA, KANKA/BONSO, BONSO/MUGUS GNSS required.

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL Airspace classification	Direction of cruising levels		Remarks Controlling unit Frequency
					Odd	Even	
1	2	3	4	5	7		10
<b>Y722 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>							<b>Incheon ACC</b>
△ SONGTAN VORTAC(SOT) 370540N 1270154E	N/A						FREQ: (at or below FL 255) 126.175(134.375) MHz 317.85(335.55) MHz
▲ OLMEN 364413N 1265928E		<u>194</u> 014	21.5	UNL FL 140(3 100) Class A, D, G			FREQ: (above FL 255) 132.15(123.55) MHz 263.15(272.60) MHz
△ GUNKU 363414N 1265949E		<u>187</u> 007	10.0	UNL FL 140(3 600) Class A, D, G			Airspace Classification refer to ENR 3.1-1
▲ PEBRI 362311N 1270013E		<u>187</u> 007	11.0	UNL FL 140(3 300) Class A, D, G			
△ ATASO 355344N 1265657E		<u>193</u> 013	29.5	UNL FL 140(2 300) Class A, D, G			
▲ MAKSA 353011N 1265422E		<u>193</u> 013	23.6	UNL FL 140(3 800) Class A, D, G			<b>Incheon ACC</b>
△ SAMUL 350736N 1265154E		<u>193</u> 013	22.7	UNL FL 140(4 000) Class A, D, G			FREQ: (at or below FL 255) 120.725(128.30) MHz 263.90(272.75) MHz
▲ KAMIT 341514N 1264618E		<u>193</u> 013	52.5	UNL FL 140(3 400) Class A, D, G			FREQ: (above FL 255) 123.725(124.50) MHz 239.25(275.40) MHz
△ GUKSU 335251N 1264357E		<u>193</u> 013	22.4	UNL FL 140(2 100) Class A, D, G			Airspace Classification refer to ENR 3.1-1
△ LOSNI 333315N 1264153E		<u>193</u> 012	19.6	UNL FL 140(1 700) Class A, D, G			<b>Incheon ACC</b>
△ JEJU VORTAC(CJU) 332305N 1263727E		<u>207</u> 027	10.8	UNL FL 140(7 600) Class A, D, G			FREQ: 124.525(132.425) MHz 255.40(233.50, 348.10) MHz
▲ SOSDO 330012N 1262735E		<u>207</u> 027	24.3	UNL FL 140(8 700) Class A, D, G			Airspace Classification refer to ENR 3.1-1
△ SAMLO 323223N 1261536E		<u>207</u> 027	29.5	UNL FL 140(1 500) Class A, D, G			
△ NIRAT 320354N 1260329E		<u>207</u> 027	30.2				<b>Incheon ACC</b>
△ ELGEP 314653N 1255617E		<u>207</u> 027	18.1				FREQ: (At or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz
▲ TESIM 313526N 1255128E		<u>207</u> 027	12.1				FREQ: (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz
▲ ATOTI(FIR BDRY) 300013N 1251154E		<u>207</u> 026	100.9				Airspace Classification refer to ENR 3.1-1
INCHEON FIR							
SANGHAI FIR							

1. Critical DME : KWA<KAMIT/GUKSU>, CJU<KAMIT/GUKSU>

2. DME GAP : GUKSU/LOSNI, LOSNI/CJU, CJU/SOSDO, SOSDO/SAMLO, SAMLO/NIRAT, NIRAT/TESIM, TESIM/ATOTI, GNSS required.

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL  Airspace classification	Direction of cruising levels		Remarks  Controlling unit Frequency
					Odd	Even	
1	2	3	4	5	6		7
<b>Y744</b> <b>(RNAV2)</b> <b>[GNSS, DME/DME, DME/DME/IRU]</b>  ▲ <b>PILIT</b> 372631N 1291731E  ▲ <b>NOBUT</b> 370715N 1291957E  ▲ <b>OSVOM</b> 363844N 1292331E  ▲ <b>LOSTO</b> 362016N 1292548E  △ <b>POHANG VORTAC(KPO)</b> 355838N 1292828E  ▲ <b>APARU</b> 352442N 1290932E  △ <b>BUSAN VORTAC(PSN)</b> 350721N 1285958E	N/A					↓  <b>Daegu ACC</b>  FREQ : (at or below FL 295) 134.175(123.65) MHz 272.40(233.60) MHz  FREQ : (above FL 295) 122.250(125.925) MHz 263.350(263.85) MHz  1. 11 000 ft to FL 240, at or above FL 280 will be blocked.  2. At or above 11 000 ft, required 15 days PPR from Air Traffic Management Office.  3. Airspace Classification refer to ENR 3.1-1	
		<u>183</u> 003	19.3	<u>UNL</u> 9 000(4 900) Class A, D, G			
		<u>183</u> 003	28.6	<u>UNL</u> 9 000(5 600) Class A, D, G			
		<u>183</u> 003	18.5	<u>UNL</u> 9 000(4 000) Class A, D, G			
		<u>183</u> 003	21.7	<u>UNL</u> 9 000(2 100) Class A, D, G			
		<u>213</u> 033	37.2	<u>UNL</u> 9 000(4 400) Class A, D, G			
		<u>213</u> 032	19.0	<u>UNL</u> 9 000(4 400) Class A, D, G			
							↑  <b>Daegu ACC</b>  FREQ : 120.575(119.375, 119.325, 134.375) MHz 254.70(335.75) MHz  1. 11 000 ft to FL 240, at or above FL 280 will be blocked.  2. At or above 11 000 ft, required 15 days PPR from Air Traffic Management Office.  3. Airspace Classification refer to ENR 3.1-1
1. Critical DME : KAE<PILIT/NOBUT>, KPO<PILIT/NOBUT>							
<b>Y781</b> <b>(RNAV2)</b> <b>[GNSS, DME/DME, DME/DME/IRU]</b>  △ <b>DALSEONG VORTAC(TGU)</b> 354835N 1283527E  ▲ <b>MASTA</b> 352847N 1283340E  △ <b>ANKUS</b> 350730N 1284616E  △ <b>OMOTU</b> 350033N 1285022E  ▲ <b>BESNA(FIR BDRY)</b> 343718N 1290751E	N/A					↓  <b>Daegu ACC</b>  FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz  Airspace Classification refer to ENR 3.1-1	
		<u>192</u> 012	19.8	<u>UNL</u> 7 000(4 900) Class A, D, G			
		<u>162</u> 342	23.6	<u>UNL</u> 7 000(4 000) Class A, D, G			
		<u>162</u> 342	7.7	<u>UNL</u> 7 000(3 500) Class A, D, G			
		<u>156</u> 336	27.3	<u>UNL</u> 7 000(2 800) Class A, D, G			
INCHEON FIR							
FUKUOKA FIR							
1. Critical DME : PSN<OMOTU/BESNA>, CJU<OMOTU/BESNA> 2. DME GAP : ANKUS/OMOTU. GNSS required.							

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL Airspace classification	Direction of cruising levels		Remarks Controlling unit Frequency
					Odd	Even	
<b>Y782 (RNAV2) [GNSS, DME/DME, DME/DME/RU]</b>							<b>Daegu ACC</b>
△ ANYANG VORTAC(SEL) 372449N 1265542E							FREQ : (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz
△ POLEG 371249N 1265935E		174 354	12.4	UNL 4 500(3 000) Class A, D, G	↓		FREQ : (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz
△ SONGTAN VORTAC(SOT) 370540N 1270154E		174 354	7.4	UNL 4 500(2 000) Class A, D, G			Airspace Classification refer to ENR 3.1-1
▲ OSPOT 365018N 1272055E		144 324	21.6	UNL 8 000(3 300) Class A, D, G			
▲ VASLI 364252N 1273003E		144 324	10.4	UNL 8 000(4 200) Class A, D, G			
▲ MAKDU 362712N 1274909E		144 324	21.9	UNL 8 000(4 200) Class A, D, G			
▲ BITUX 361645N 1280148E		144 324	14.6	UNL 10 000(4 500) Class A, D, G			
△ DALSEONG VORTAC(TGU) 354835N 1283527E		162 342	20.4	UNL 8 000(4 400) Class A, D, G			
▲ KALOD 353012N 1284626E		162 342	25.4	UNL 5 000(3 600) Class A, D, G			
△ BUSAN VORTAC(PSN) 350721N 1285958E		162 342	26.6	UNL 4 000(3 000) Class A, D, G			
▲ APELA(FIR BDRY) 344323N 1291400E						↑	
INCHEON FIR							
FUKUOKA FIR							

1. Critical DME : SEL<SEL/POLEG>, SOT<SEL/POLEG>, SEL<POLEG/SOT>, SOT<POLEG/SOT>

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.



Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL Airspace classification	Direction of cruising levels		Remarks Controlling unit Frequency
					Odd	Even	
1	2	3	4	5	6		7
<b>Z50 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  △ EGOBA 372915N 1272246E  △ SONGTAN VORTAC(SOT) 370540N 1270154E  ▲ BULTI 364322N 1264930E							<b>Daegu ACC</b>  FREQ: (at or below FL295) 128.70(118.925) MHz 270.50(263.60) MHz  FREQ: (above FL295) 132.80(120.525) MHz 290.60(335.45) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	224 044	28.8	UNL FL 140(3 300) Class A, D, G		↓	
		213 032	24.4	UNL FL 140(2 900) Class A, D, G	↑		
<b>Z51 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  ▲ BOPTA 364406N 1263658E  △ MOXID 362311N 1264359E  △ BEDES 360905N 1264844E							<b>Incheon ACC</b>  FREQ: (at or below FL255) 126.175(134.375) MHz 317.85(335.55) MHz  FREQ: (above FL255) 132.15(123.55) MHz 263.15(272.60) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	173 353	21.6	UNL FL 150(3 900) Class A, D, G		↓	
		173 353	14.6	UNL FL 150(3 600) Class A, D, G			
<b>Z52 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  ▲ OLMEN 364413N 1265928E  △ POSAN 365615N 1271316E  △ KAKSO 370745N 1272637E							<b>Incheon ACC</b>  FREQ: (at or below FL255) 126.175(134.375) MHz 317.85(335.55) MHz  FREQ: (above FL255) 132.15(123.55) MHz 263.15(272.60) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	051 231	16.4	UNL 8 000(3 400) Class A, D, G	↓		
		051 232	15.7	UNL 8 000(3 000) Class A, D, G		↑	
<b>Z53 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>  ▲ BITUX 361645N 1280148E  △ TEBEX 363341N 1275929E  △ BASEM 365037N 1275710E							<b>Daegu ACC</b>  FREQ: (at or below FL295) 128.70(118.925) MHz 270.50(263.60) MHz  FREQ: (above FL295) 132.80(120.525) MHz 290.60(335.45) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	002 182	17.0	UNL FL 160(4 000) Class A, D, G		↓	
		002 182	17.0	UNL FL 160(4 600) Class A, D, G	↑		

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.



Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL  Airspace classification	Direction of cruising levels		Remarks Controlling unit Frequency
					Odd	Even	
1	2	3	4	5	6		7
<b>Z54</b> <b>(RNAV2)</b> <b>[GNSS, DME/DME,</b> <b>DME/DME/IRU]</b>  △ SONGTAN VORTAC(SOT) 370540N 1270154E  ▲ MONSI 371247N 1265015E  △ GOGET 372442N 1263036E							<b>Daegu ACC</b>  FREQ: (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz  FREQ: (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	316 136	11.7	UNL 8 000(2 400) Class A, D, G			
		316 136	19.7	UNL 8 000(2 300) Class A, D, G	↑		
<b>Z55</b> <b>(RNAV2)</b> <b>[GNSS, DME/DME,</b> <b>DME/DME/IRU]</b>  SANGHAI FIR INCHEON FIR  ▲ AGAVO(FIR BDRY) 371000N 1240000E  ▲ NONOS 364046N 1242453E							<b>Daegu ACC</b>  FREQ: (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz  FREQ: (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	154 334	35.4	UNL FL 140(1 500) Class A, D, G			
1. Critical DME : SEL<AGAVO/NONOS>, KUZ<AGAVO/NONOS>							
<b>Z56</b> <b>(RNAV2)</b> <b>[GNSS, DME/DME,</b> <b>DME/DME/IRU]</b>  PYONGYANG FIR INCHEON FIR  ▲ KANSU(FIR BDRY) 383800N 1322830E  △ PALDU 375813N 1323625E  △ SABET 373829N 1324019E  ▲ IGRAS(FIR BDRY) 371846N 1324411E							<b>Daegu ACC</b>  FREQ : 122.250(125.925) MHz 263.350(263.85) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	180 360	40.2	UNL FL 200(1 500) Class A, G	↓		
		180 360	19.9				
		180 360	19.9				
1. Critical DME : KAE<PALDU/SABET>, KPO<PALDU/SABET>, KAE<SABET/IGRAS>, KPO<SABET/IGRAS> 2. DME GAP : KANSU/PALDU, GNSS required.							

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL	Direction of cruising levels		Remarks Controlling unit Frequency
				Airspace classification	Odd	Even	
1	2	3	4	5	6		7
<b>Z57 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>							<b>Daegu ACC</b>  FREQ : (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz
△ RILRO 371033N 1241442E	N/A	<u>154</u> 334	14.5	UNL FL 150(1 500) Class A, D, G	↓		FREQ : (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz
△ DALPO 365835N 1242453E							Airspace Classification refer to ENR 3.1-1
1. Critical DME : SEL<RILRO/DALPO>, KUZ<RILRO/DALPO>							
<b>Z63 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>							<b>Daegu ACC</b>  FREQ : (at or below FL 295) 134.175(123.65) MHz 272.40(233.60) MHz
▲ PILIT 372631N 1291731E	N/A	<u>060</u> 241	23.8	UNL FL 250(1 500) Class A, G	↓		FREQ : (above FL 295) 122.250(125.925) MHz 263.350(263.85) MHz
△ LESBU 374116N 1294104E							Airspace Classification refer to ENR 3.1-1
1. Critical DME : KAE<PILIT/LESBU>, KPO<PILIT/LESBU>							
<b>Z81 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b>							<b>Incheon ACC</b>  FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz
△ KIDOS 335028N 1263402E	N/A	<u>182</u> 001	27.5	UNL FL 140(8 700) Class A, D, G		↓	Airspace Classification refer to ENR 3.1-1
△ JEJU VORTAC(CJU) 332305N 1263727E							
<b>Z82 (RNAV2) [GNSS, DME/DME/IRU]</b>							<b>Incheon ACC</b>  FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz
△ JEJU VORTAC(CJU) 332305N 1263727E	N/A	<u>230</u> 050	31.0	UNL FL 140(8 700) Class A, D, G		↓	Airspace Classification refer to ENR 3.1-1
▲ PANSI 330014N 1261225E							
1. DME GAP : CJU/PANSI, GNSS required.							

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits Lower limits (MOCA) ft AMSL or FL	Direction of cruising levels		Remarks Controlling unit Frequency
				Airspace classification	Odd	Even	
1	2	3	4	5	6		7
<b>Z83 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b> △ DALSEONG VORTAC(TGU) 354835N 1283527E  ▲ MASTA 352847N 1283340E  ▲ SARAM 350736N 1283147E  ▲ ENGOT 344834N 1282952E  ▲ ANROD 343758N 1282952E	N/A						<b>Daegu ACC</b>  FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz  Airspace Classification refer to ENR 3.1-1
		192 012	19.8	UNL 5 000(4 900) Class A, D, G		↓	
		192 012	21.2	UNL 5 000(3 800) Class A, D, G			
		193 013	19.1	UNL 5 000(3 000) Class A, D, G			
		188 008	10.6	UNL 5 000(2 300) Class A, D, G	↑		
1. Critical DME : PSN<TGU/MASTA>, TGU<TGU/MASTA>, PSN<MASTA/SARAM>, TGU<MASTA/SARAM>, PSN<SARAM/ENGOT>, TGU<SARAM/ENGOT> 2. DME GAP : ENGOT/ANROD, GNSS required.							
<b>Z84 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]</b> △ BUSAN VORTAC(PSN) 350721N 1285958E  ▲ KALEK(FIR BDRY) 351232N 1295305E	N/A						<b>Daegu ACC</b>  FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz  Airspace Classification refer to ENR 3.1-1
		091 272	43.8	UNL 8 000(3 100) Class A, D, G	↓	↑	
INCHEON FIR							
FUKUOKA FIR							
<b>Z85 (RNAV2) [GNSS, DME/DME/IRU]</b> △ BILUM 334613N 1270439E  △ PAPLU 333441N 1270337E  ▲ RUGMA(FIR BDRY) 323012N 1265753E	N/A						<b>Incheon ACC</b>  FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz  Airspace Classification refer to ENR 3.1-1
		192 012	11.5	UNL FL 170(1 500)	↓		
		192 011	64.5	Class A, D, G		↑	
INCHEON FIR							
FUKUOKA FIR							
1. DME GAP : BILUM/PAPLU, PAPLU/RUGMA, GNSS required.							

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits	Direction of cruising levels		Remarks Controlling unit Frequency
				Lower limits (MOCA) ft AMSL or FL  Airspace classification	Odd	Even	
1	2	3	4	5	7		10
<b>Z86</b> <b>(RNAV2)</b> <b>[GNSS, DME/DME/IRU]</b>  △ BONSO 302840N 1250851E  ▲ ATOTI(FIR BDRY) 300013N 1251154E							<b>Incheon ACC</b>  FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz  * Note Any aircraft planning to operate below FL 320 after MUGUS must use Z86 between BONSO and ATOTI, then use B576.
	N/A	181 001	28.5	UNL FL 140(1 500) Class A, D, G		↓	
INCHEON FIR							Airspace Classification refer to ENR 3.1-1
FUKUOKA FIR							
1. DME GAP : BONSO/ATOTI, GNSS required.							
<b>Z91</b> <b>(RNAV2)</b> <b>[GNSS, DME/DME, DME/DME/IRU]</b>  △ BUSAN VORTAC(P SN) 350721N 1285958E  ▲ INVOK(FIR BDRY) 344719N 1291923E							<b>Daegu ACC</b>  FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz  Airspace Classification refer to ENR 3.1-1
	N/A	149 329	25.6	UNL 10 000(3 000) Class A, D, G	↓		
INCHEON FIR							Airspace Classification refer to ENR 3.1-1
FUKUOKA FIR							

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

Route designator (Navigation specification) Name of significant points Coordinates [Navigation Specification limitation]	Waypoint IDENT of VOR/DME BRG & DIST ELEV DME Antenna	MAG TRACK °	Geodetic DIST NM	Upper limits	Direction of cruising levels		Remarks Controlling unit Frequency
				Lower limits (MOCA) ft AMSL or FL  Airspace classification	Odd	Even	
1	2	3	4	5	7		10
<b>Y590 (RNAV2) [GNSS, DME/DME/IRU]</b>							<b>Incheon ACC</b>  FREQ: (at or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz  FREQ : (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz  Airspace Classification refer to ENR 3.1-1
FUKUOKA FIR							
INCHEON FIR							
▲ BEDAR(FIR BDRY) 315401N 1262910E	N/A	<u>263</u> 082	28.9	UNL FL 240(1 500)  Class A, G			
△ ELGEP 314653N 1255617E		<u>262</u> 082	14.5				
△ IKEDO 314314N 1253948E		<u>288</u> 108	34.5				
▲ SADLI 314948N 1250000E							
1. DME GAP : BEDAR/SADLI, GNSS required. 2. Flight Level Allocation Scheme (FLAS) - For the eastbound over BEDAR : FL 250, FL 290, FL 310, FL 390							

\* RNAV2 represents a navigation accuracy of ± 2 NM on a 95% containment basis.

INTENTIONALLY

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