ENR 3.3 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 Airspace classification	Direction of cruising levels Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
L512 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]**							**Daegu ACC** FREQ : 122.250(125.925) MHz 263.350(263.85) MHz
△ TENAS 373820N 1313427E	N/A	098 / 279	52.3	UNL / FL 270(1 500) Class A, G	↓		Airspace Classification refer to ENR 3.1-1
△ SABET 373829N 1324019E		093 / 274	15.7			↑	* L512 OPS HR between TENAS and ANDOL - EASTBOUND : H24 - WESTBOUND : H24
▲ ANDOL(FIR BDRY) 373958N 1330000E							** After ANDOL, MEA is FL 290, see AIP JAPAN.
INCHEON FIR							*** Extended DME DOC volume service is 220 NM.
FUKUOKA FIR							
1. Critical DME : KAE<TENAS/SABET>, KPO<TENAS/SABET> 2. DME GAP : SABET/ANDOL, GNSS required.							
Y233 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]**							**Daegu ACC** FREQ : 122.250(125.925) MHz 263.350(263.85) MHz
△ BUSKO 374033N 1301610E	N/A	069 / 250	30.0	UNL / FL 200(1 500) Class A, D, G	↓		Airspace Classification refer to ENR 3.1-1
△ SELPA 375515N 1304911E		070 / 251	69.1				
△ ONATA 382832N 1320602E		071 / 251	20.0			↑	
▲ KANSU(FIR BDRY) 383800N 1322830E							
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.

Change : Information of frequencies.

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 Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y253 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]**							**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
△ DALSU 350731N 1264206E	N/A	097/277	5.4	UNL / 8 000(2 400) Class A, D, G	↓		
△ GWANGJU VOR(KWA) 350734N 1264844E		097/278	2.6	UNL / 8 000(2 000) Class A, D, G			
△ SAMUL 350736N 1265154E		097/278	22.1	UNL / 8 000(5 200) Class A, D, G			
▲ TEDAN 350744N 1271852E		098/278	13.5	UNL / 8 000(5 400) Class A, D, G			**Daegu ACC** FREQ : 128.175(128.325) MHz 335.50(275.20) MHz Airspace Classification refer to ENR 3.1-1
△ ANUBA 350746N 1273523E		098/278	44.7				
▲ SAPDI 350737N 1282952E		098/278	1.6	UNL / 8 000(2 400) Class A, D, G			
▲ SARAM 350736N 1283147E		098/279	11.9	UNL / 8 000(4 000) Class A, D, G			**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
△ ANKUS 350730N 1284616E		099/279	11.2	UNL / 8 000(3 500) Class A, D, G		↑	
△ BUSAN VORTAC(PSN) 350721N 1285958E							

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.

Change : Information of controlling unit and frequencies.

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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y437 **(RNAV2)** **[GNSS,DME/DME, DME/DME/IRU]**							**Daegu ACC** 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 Airspace Classification refer to ENR 3.1-1
△ GANGWON VORTAC(KAE) 374203N 1284514E	N/A	100 / 280	44.3	UNL / 8 000(6 400) Class A, D, G	↓		
△ LESBU 374116N 1294104E		100 / 280	7.8	UNL / 8 000(1 500) Class A, D, G			**Daegu ACC** FREQ : 122.250(125.925) MHz 263.350(263.85) MHz Airspace Classification refer to ENR 3.1-1
▲ UGOVI 374105N 1295051E		100 / 281	20.1				
△ BUSKO 374033N 1301610E		101 / 281	62.2				
△ TENAS 373820N 1313427E		044 / 224	20.0	UNL / FL 200(1 500) Class A, D, G			
△ MALSO 375440N 1314904E		044 / 225	53.3			↑	
▲ KANSU(FIR BDRY) 383800N 1322830E							
INCHEON FIR							
PYONGYANG FIR							

1. Critical DME : KAE<KAE/LESBU>, KPO<KAE/LESBU>, KAE<LESBU/UGOVI>, KPO<LESBU/UGOVI>, KAE<UGOVI/BUSKO>, KPO<UGOVI/BUSKO>, KAE<BUSKO/TENAS>, KPO<BUSKO/TENAS>, KAE<TENAS/MALSO>, KPO<TENAS/MALSO>
2. DME GAP : MALSO/KANSU GNSS required.

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

Change : Information of Y437.

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 Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y571 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]**							**Incheon ACC** FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz Airspace Classification refer to ENR 3.1-1
▲ SOSDO 330012N 1262735E	N/A	048 / 229	17.4	UNL / 11 000(1 500) Class A, D, G	↓		
△ OMKIM 331320N 1264114E		049 / 229	28.4	UNL / 11 000(2 200) Class A, D, G			
△ PAPLU 333441N 1270337E		056 / 236	18.2	UNL / 11 000(1 500) Class A, D, G			
▲ AKPON 334650N 1271953E		056 / 236	42.9	UNL / 11 000(1 800) Class A, D, G			**Daegu ACC** FREQ : 128.175(128.325) MHz 335.50(275.20) MHz Airspace Classification refer to ENR 3.1-1
▲ NISAV 341519N 1275835E		056 / 237	34.4	UNL / 11 000(2 100) Class A, D, G			
▲ ANROD 343758N 1282952E		057 / 237	26.6	UNL / 11 000(2 800) Class A, D, G			
△ POVEM 345523N 1285416E		029 / 209	12.8	UNL / 11 000(3 000) Class A, D, G			
△ BUSAN VORTAC(PSN) 350721N 1285958E							
1. DME GAP : SOSDO/OMKIM, OMKIM/PAPLU, PAPLU/AKPON, AKPON/NISAV 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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y572 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC** FREQ : 128.175(128.325) MHz 335.50(275.20) MHz
△ BUSAN VORTAC(PSN) 350721N 1285958E						↓	Airspace Classification refer to ENR 3.1-1
△ OLMUD 350225N 1284916E		249 / 069	10.1	UNL / 11 000(3 000) Class A, D, G			
▲ ENGOT 344834N 1282952E		237 / 057	21.1	UNL / 11 000(3 200) Class A, D, G			
▲ POVOR 341520N 1274400E		237 / 056	50.4	UNL / 11 000(2 600) Class A, D, G			
▲ UPGOS 335733N 1271953E		236 / 056	26.8	UNL / 11 000(2 000) Class A, D, G			
△ BILUM 334613N 1270439E	N/A	236 / 056	17.0	UNL / 11 000(1 500) Class A, D, G			**Incheon ACC** FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz
△ BEPKO 333910N 1265514E		236 / 056	10.5	UNL / 11 000(1 500) Class A, D, G			Airspace Classification refer to ENR 3.1-1
△ JEJU VORTAC(CJU) 332305N 1263727E		230 / 050	21.9	UNL / 11 000(5 600) Class A, D, G			※ The cruising levels from CJU to RUGMA are even levels due to operational reasons.
△ OMKIM 331320N 1264114E		169 / 349	10.2	UNL / 11 000(8 700) Class A, D, G		↓	
▲ TOSAN 330012N 1264619E		169 / 349	13.8	UNL / 11 000(1 500) Class A, D, G			※ The cruising levels from RUGMA to CJU are odd levels due to operational reasons.
▲ RUGMA(FIR BDRY) 323012N 1265753E		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.

Change : Information of frequencies.

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 Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y579 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC** FREQ : 122.250(125.925) MHz 263.350(263.85) MHz
△ TENAS 373820N 1313427E	N/A	228 / 047	68.1	UNL / FL 140(1 500) Class A, D, G			Airspace Classification refer to ENR 3.1-1
△ AGSUS 364521N 1304044E		229 / 049	36.2				
▲ DABIK 361743N 1301143E		229 / 048	28.1				**Daegu ACC** FREQ : 120.575(119.375, 119.325, 134.375) MHz 254.70(335.75) MHz
▲ BULGA 355609N 1294924E		228 / 048	40.2	UNL / FL 140(2 700) Class A, D, G			
▲ BEDOM 352513N 1291754E		228 / 047	23.1	UNL / FL 140(3 800) Class A, D, G			Airspace Classification refer to ENR 3.1-1
△ BUSAN VORTAC(PSN) 350721N 1285958E							

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.

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

Change : Information of frequencies.

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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y644 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**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
SANGHAI FIR							
INCHEON FIR							
▲ AGAVO(FIR BDRY) 371000N 1240000E							
△ RILRO 371033N 1241442E	N/A	095/276	11.8	UNL / FL 150(1 500) Class A, D, G	↓		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
△ GONAV 371048N 1242453E		096/276	8.1				
△ BODOL 371122N 1244954E		096/277	20.0				
▲ REBIT 371203N 1252913E		097/277	31.4				
△ BELTU 371218N 1254759E		097/278	15.0				
△ BOGAN 371241N 1262812E		098/278	32.1	UNL / 8 000(2 400) Class A, D, G			
▲ MONSI 371247N 1265015E		098/278	17.6	UNL / 8 000(3 200) Class A, D, G			
△ POLEG 371249N 1265935E		098/278	7.5	UNL / 8 000(2 400) Class A, D, G			
△ EGOBA 372915N 1272246E		057/237	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>

* 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 Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y655 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**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
△ GONAV 371048N 1242453E	N/A	188/008	12.2	UNL / FL 140(1 500) Class A, D, G	↓		
△ DALPO 365835N 1242453E		188/008	17.8				
▲ NONOS 364046N 1242453E		188/008	20.6				
▲ BIDRI 362007N 1242453E		188/008	49.4				**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
▲ DANPA 353036N 1242453E		188/007	88.9				
▲ PALSA 340131N 1242453E		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
△ TOLIS 335030N 1242453E		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
▲ ENSUM 321302N 1244635E		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
△ BONSO 302840N 1250851E		181/001	28.5				
▲ ATOTI(FIR BDRY) 300013N 1251154E					↑		
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]							**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
△ GWANGJU VOR(KWA) 350734N 1264844E	N/A	072/253	54.7	10 000 / 8 000(7 100) Class D	↓		
▲ IGDOK 353104N 1274907E		073/254	41.6	10 000 / 8 000(4 800) 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
△ DALSEONG VORTAC(TGU) 354835N 1283527E					↑		

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

Change : Information of Y655.

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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y659 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Incheon ACC** 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
△ GUNSAN VORTAC(KUZ) 355437N 1263641E	N/A	101/281	8.5	10 000 / 7 000(1 700) Class D	↓		
△ ELPOS 355410N 1264707E		101/281	5.5				
△ RINBO 355352N 1265349E		101/282	17.8	10 000 / 7 000(3 700) Class D			
△ MELES 355251N 1271542E		102/282	17.2	10 000 / 7 000(5 000) Class D			
△ OPEDA 355149N 1273652E		102/282	47.7	10 000 / 7 000(6 600) 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
△ DALSEONG VORTAC(TGU) 354835N 1283527E		085/265	24.6	UNL / 6 000(4 200) Class A, D, G			
▲ LAPAL 355413N 1290452E		085/265	19.7	UNL / 6 000(3 300) Class A, D, G		↑	
△ POHANG VORTAC(KPO) 355838N 1292828E							
Y677 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Incheon ACC** FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz Airspace Classification refer to ENR 3.1-1
△ TOLIS 335030N 1242453E	N/A	111/291	73.0	UNL / 9 000(1 500) Class A, D, G	↓		
▲ LIMDI 333313N 1254953E		111/292	29.0	UNL / 9 000(4 100) Class A, D, G			
△ REMOS 332605N 1262329E		112/292	12.1	UNL / 9 000(8 700) Class A, D, G			
△ JEJU VORTAC(CJU) 332305N 1263727E		089/269	35.9	UNL / 9 000(6 300) Class A, D, G			
▲ TAMNA 332815N 1271953E		089/270	49.8	UNL / 9 000(1 500) Class A, D, G		↑	
▲ SAMDO(FIR BDRY) 333503N 1281857E							
INCHEON FIR							
FUKUOKA FIR							
1. Critical DME : KWA<LIMDI/REMOS>, CJU<LIMDI/REMOS>, PSN<CJU/TAMNA>, CJU<CJU/TAMNA>, PSN<TAMNA/SAMDO>, CJU<TAMNA/SAMDO> 2. DME GAP : TOLIS/LIMDI, REMOS/CJU GNSS required.							

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

Change : Information of Y677, controlling unit and frequencies.

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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y685 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]**							**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
△ ANYANG VORTAC(SEL) 372449N 1265542E	N/A	133/313	10.7	UNL / 8 000(3 200) / Class A, D, G	↓		Only flying westbound from KPO to SEL on Y685 is authorized except ACFT departing from RKTY or RKTI. 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
△ KALMA 371845N 1270645E		133/313	19.3	UNL / 8 000(2 900) / Class A, D, G			
△ KAKSO 370745N 1272637E		133/313	11.5	UNL / 8 000(3 600) / Class A, D, G			
▲ GUKDO 370111N 1273823E		133/314	9.2	UNL / 8 000(3 700) / Class A, D, G			**Daegu ACC** FREQ : 120.575(119.375, 119.325, 134.375) MHz 254.70(335.75) MHz Only flying westbound from KPO to SEL on Y685 is authorized except ACFT departing from RKTY or RKTI. 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
△ ENSAL 365554N 1274747E		134/314	9.2	UNL / 8 000(4 000) / Class A, D, G			
△ BASEM 365037N 1275710E		134/314	12.5	UNL / 8 000(5 000) / Class A, D, G			
▲ BIGOB 364325N 1280952E		134/314	9.5	UNL / 8 000(4 900) / Class A, D, G			
△ YECHEON VOR(CUN) 363755N 1281931E		133/314	30.8	UNL / 8 000(3 800) / Class A, D, G			
△ ELAPI 362014N 1285051E		134/314	37.3	UNL / 8 000(4 700) / Class A, D, G			
△ POHANG VORTAC(KPO) 355838N 1292828E		107/287	17.2	UNL / 8 000(2 100) / Class A, D, G			
▲ BULGA 355609N 1294924E		107/287	44.4	UNL / 8 000(1 500) / Class A, D, G		↑	
▲ SAPRA(FIR BDRY) 354926N 1304325E							
INCHEON FIR							
FUKUOKA FIR							

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

Change : Information of frequencies.

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 Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y697 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**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 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 REF. ENR 3.1-9 for the detailed altitude conversion procedures. Only flying westbound from SEL to AGAVO on Y697 is authorized.
SANGHAI FIR							
INCHEON FIR							
▲ AGAVO(FIR BDRY) 371000N 1240000E							
▲ OLBIM 371411N 1240751E	N/A	064 / 244	7.5	UNL / FL 150(1 500) Class A, D, G			
△ NOGON 372250N 1242505E		066 / 246	16.2				
△ ANSIM 372323N 1245009E		097 / 277	20.0				
▲ BINIL 372349N 1251359E		097 / 277	19.0				
▲ NOPIK 372412N 1253905E		097 / 277	20.0				
△ GOGET 372442N 1263036E		097 / 278	41.0	UNL / 8 000(2 100) Class A, D, G			
△ ANYANG VORTAC(SEL) 372449N 1265542E		098 / 278	20.0	UNL / 7 500(3 400) Class A, D, G		↑	
△ EGOBA 372915N 1272246E		087 / 267	22.0		↓		
▲ KARBU 373159N 1273952E		087 / 267	13.9	UNL / 7 500(5 100) Class A, D, G			
▲ TORUS 373625N 1280807E		087 / 268	22.9	UNL / 7 500(4 500) Class A, D, G			**Daegu ACC** 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 Airspace Classification refer to ENR 3.1-1
▲ BIKSI 374032N 1283504E		088 / 268	21.8	UNL / 7 500(7 500) Class A, D, G			
△ GANGWON VORTAC(KAE) 374203N 1284514E		088 / 268	8.2	UNL / 7 500(7 100) Class A, D, G			
▲ PILIT 372631N 1291731E		130 / 310	30.0	UNL / 8 000(7 100) Class A, D, G			
▲ ESNEG 371014N 1295051E		130 / 310	31.2				
△ AGSUS 364521N 1304044E		130 / 310	47.1	UNL / 9 000(1 500) Class A, D, G			**Daegu ACC** FREQ : 122.250(125.925) MHz 263.350(263.85) MHz Only flying westbound from LANAT to KAE on G597 shall get 24HR PPR from Daegu ACC. Airspace Classification refer to ENR 3.1-1
▲ LANAT(FIR BDRY) 362224N 1312542E		130 / 311	42.9			↑	
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/LANAT>, KPO<AGSUS/LANAT>

* 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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	7		10
Y711 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**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
▲ MONSI 371247N 1265015E	N/A	190 / 010	29.4	UNL / FL 140(2 900) Class A, D, G			
▲ BULTI 364322N 1264930E		187 / 007	10.0				**Incheon ACC** 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				
△ 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			
▲ MANGI 353011N 1264432E		193 / 013	22.7	UNL / FL 140(3 800) Class A, D, G			**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
△ DALSU 350731N 1264206E		193 / 013	42.4	UNL / FL 140(4 000) Class A, D, G			
△ 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			**Incheon ACC** FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz 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			
▲ PANSI 330014N 1261225E		207 / 027	33.4	UNL / FL 140(1 500) Class A, D, G			**Incheon ACC** 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
△ DOMKO 322848N 1255859E		207 / 027	30.1				
△ PONIK 320021N 1254659E		207 / 026	18.2				
△ IKEDO 314314N 1253948E		207 / 026	12.0				
▲ KANKA 313155N 1253504E		207 / 026	67.0				
△ BONSO 302840N 1250851E		206 / 026	30.2				
▲ MUGUS(FIR BDRY) 300006N 1245712E							
INCHEON FIR							
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.

Change : Information of remarks for Y711.

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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	7		10
Y722 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Incheon ACC**
△ SONGTAN VORTAC(SOT) 370540N 1270154E							FREQ: (at or below FL 255) 126.175(134.375) MHz 317.85(335.55) MHz
▲ OLMEN 364413N 1265928E		194 / 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		187 / 007	10.0	UNL / FL 140(3 600) / Class A, D, G			Airspace Classification refer to ENR 3.1-1
▲ PEBRI 362311N 1270013E		187 / 007	11.0	UNL / FL 140(3 300) / Class A, D, G			
△ ATASO 355344N 1265657E		193 / 013	29.5	UNL / FL 140(2 300) / Class A, D, G			
▲ MAKSA 353011N 1265422E		193 / 013	23.6	UNL / FL 140(3 800) / Class A, D, G			**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
△ SAMUL 350736N 1265154E		193 / 013	22.7	UNL / FL 140(4 000) / Class A, D, G			
▲ KAMIT 341514N 1264618E		193 / 013	52.5	UNL / FL 140(3 400) / Class A, D, G			
△ GUKSU 335251N 1264357E	N/A	193 / 013	22.4	UNL / FL 140(2 100) / Class A, D, G			**Incheon ACC** FREQ: 124.525(132.425) MHz 255.40(233.50, 348.10) MHz Airspace Classification refer to ENR 3.1-1
△ LOSNI 333315N 1264153E		193 / 012	19.6	UNL / FL 140(1 700) / Class A, D, G			
△ JEJU VORTAC(CJU) 332305N 1263727E		207 / 027	10.8	UNL / FL 140(7 600) / Class A, D, G			
▲ SOSDO 330012N 1262735E		207 / 027	24.3	UNL / FL 140(8 700) / Class A, D, G			
△ SAMLO 323223N 1261536E		207 / 027	29.5	UNL / FL 140(1 500) / Class A, D, G			**Incheon ACC** 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
△ NIRAT 320354N 1260329E		207 / 027	30.2				
△ ELGEP 314653N 1255617E		207 / 027	18.1				
▲ TESIM 313526N 1255128E		207 / 027	12.1				
▲ ATOTI(FIR BDRY) 300013N 1251154E		207 / 026	100.9		↑		
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 Odd	Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y744 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC** 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
▲ PILIT 372631N 1291731E	N/A	183 / 003	19.3	UNL / 9 000(4 900) Class A, D, G	↓	↓	
▲ NOBUT 370715N 1291957E		183 / 003	28.6	UNL / 9 000(5 600) Class A, D, G			
▲ OSVOM 363844N 1292331E		183 / 003	18.5	UNL / 9 000(4 000) Class A, D, G			**Daegu ACC** 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
▲ LOSTO 362016N 1292548E		183 / 003	21.7	UNL / 9 000(2 100) Class A, D, G			
△ POHANG VORTAC(KPO) 355838N 1292828E		213 / 033	37.2	UNL / 9 000(4 400) Class A, D, G			
▲ APARU 352442N 1290932E		213 / 032	19.0	UNL / 9 000(4 400) Class A, D, G	↑		
△ BUSAN VORTAC(PSN) 350721N 1285958E							
1. Critical DME : KAE<PILIT/NOBUT>, KPO<PILIT/NOBUT>							
Y781 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**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
△ DALSEONG VORTAC(TGU) 354835N 1283527E	N/A	192 / 012	19.8	UNL / 7 000(4 900) Class A, D, G	↓		
▲ MASTA 352847N 1283340E		162 / 342	23.6	UNL / 7 000(4 000) Class A, D, G			
△ ANKUS 350730N 1284616E		162 / 342	7.7	UNL / 7 000(3 500) Class A, D, G			
△ OMOTU 350033N 1285022E		156 / 336	27.3	UNL / 7 000(2 800) Class A, D, G			
▲ BESNA(FIR BDRY) 343718N 1290751E							
INCHEON FIR							
FUKUOKA FIR							
1. Critical DME : PSN<OMOTU/BESNA>, CJU<OMOTU/BESNA> 2. DME GAP : ANKUS/OMOTU, GNSS required.							

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

Change : Information of Y744.

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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Y782 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]**							**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
△ ANYANG VORTAC(SEL) 372449N 1265542E	N/A	174 / 354	12.4	UNL / 4 500(3 000) / Class A, D, G	↓		
△ POLEG 371249N 1265935E		174 / 354	7.4	UNL / 4 500(2 000) / Class A, D, G			
△ SONGTAN VORTAC(SOT) 370540N 1270154E		144 / 324	21.6	UNL / 8 000(3 300) / Class A, D, G			
▲ OSPOT 365018N 1272055E		144 / 324	10.4				**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
▲ VASLI 364252N 1273003E		144 / 324	21.9	UNL / 8 000(4 200) / Class A, D, G			
▲ MAKDU 362712N 1274909E		144 / 324	14.6				
▲ BITUX 361645N 1280148E		144 / 324	39.2	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.

Change : Information of frequencies.

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: Odd	Direction of cruising levels: Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Z50 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC**
△ EGOBA 372915N 1272246E							FREQ : (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz
	N/A	224 / 044	28.8	UNL / FL 140(3 300) / Class A, D, G		↓	FREQ : (above FL295) 132.80(120.525) MHz 290.60(335.45) MHz
△ SONGTAN VORTAC(SOT) 370540N 1270154E		213 / 032	24.4	UNL / FL 140(2 900) / Class A, D, G	↑		Airspace Classification refer to ENR 3.1-1
▲ BULTI 364322N 1264930E							
Z51 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Incheon ACC**
▲ BOPTA 364406N 1263658E							FREQ : (at or below FL 255) 126.175(134.375) MHz 317.85(335.55) MHz
	N/A	173 / 353	21.6	UNL / FL 150(3 900) / Class A, D, G		↓	FREQ : (above FL 255) 132.15(123.55) MHz 263.15(272.60) MHz
△ MOXID 362311N 1264359E		173 / 353	14.6	UNL / FL 150(3 600) / Class A, D, G			Airspace Classification refer to ENR 3.1-1
△ BEDES 360905N 1264844E							
Z52 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Incheon ACC**
▲ OLMEN 364413N 1265928E							FREQ : (at or below FL 255) 126.175(134.375) MHz 317.85(335.55) MHz
	N/A	051 / 231	16.4	UNL / 8 000(3 400) / Class A, D, G	↓		FREQ : (above FL 255) 132.15(123.55) MHz 263.15(272.60) MHz
△ POSAN 365615N 1271316E		051 / 232	15.7	UNL / 8 000(3 000) / Class A, D, G		↑	Airspace Classification refer to ENR 3.1-1
△ KAKSO 370745N 1272637E							
Z53 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC**
▲ BITUX 361645N 1280148E							FREQ : (at or below FL 295) 128.70(118.925) MHz 270.50(263.60) MHz
	N/A	002 / 182	17.0	UNL / FL 160(4 000) / Class A, D, G		↓	FREQ : (above FL 295) 132.80(120.525) MHz 290.60(335.45) MHz
△ TEBEX 363341N 1275929E		002 / 182	17.0	UNL / FL 160(4 600) / Class A, D, G	↑		Airspace Classification refer to ENR 3.1-1
△ BASEM 365037N 1275710E							

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

Change : Information of frequencies.

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 Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Z54 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**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
△ SONGTAN VORTAC(SOT) 370540N 1270154E	N/A	316 / 136	11.7	UNL / 8 000(2 400) Class A, D, G		↓	
▲ MONSI 371247N 1265015E		316 / 136	19.7	UNL / 8 000(2 300) Class A, D, G	↑		
△ GOGET 372442N 1263036E							
Z55 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**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
SANGHAI FIR							
INCHEON FIR							
▲ AGAVO(FIR BDRY) 371000N 1240000E	N/A	154 / 334	35.4	UNL / FL 140(1 500) Class A, D, G		↑	
▲ NONOS 364046N 1242453E							
1. Critical DME : SEL<AGAVO/NONOS>, KUZ<AGAVO/NONOS>							
Z56 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC** FREQ : 122.250(125.925) MHz 263.350(263.85) MHz Airspace Classification refer to ENR 3.1-1
PYONGYANG FIR							
INCHEON FIR							
▲ KANSU(FIR BDRY) 383800N 1322830E	N/A	180 / 360	40.2	UNL / FL 200(1 500) Class A, G	↓		
△ PALDU 375813N 1323625E		180 / 360	19.9				
△ SABET 373829N 1324019E		180 / 360	19.9			↑	
▲ IGRAS(FIR BDRY) 371846N 1324411E							
INCHEON FIR							
FUKUOKA FIR							
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 Airspace classification	Direction of cruising levels Odd	Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Z57 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]** △ RILRO 371033N 1241442E △ DALPO 365835N 1242453E							**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
	N/A	154 / 334	14.5	UNL / FL 150(1 500) Class A, D, G	↓		
1. Critical DME : SEL<RILRO/DALPO>, KUZ<RILRO/DALPO>							
Z63 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]** ▲ PILIT 372631N 1291731E △ LESBU 374116N 1294104E							**Daegu ACC** 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 Airspace Classification refer to ENR 3.1-1
	N/A	060 / 241	23.8	UNL / FL 250(1 500) Class A, G	↓	↑	
1. Critical DME : KAE<PILIT/LESBU>, KPO<PILIT/LESBU>							
Z81 **(RNAV2)** **[GNSS, DME/DME, DME/DME/IRU]** △ KIDOS 335028N 1263402E △ JEJU VORTAC(CJU) 332305N 1263727E							**Incheon ACC** FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz Airspace Classification refer to ENR 3.1-1
	N/A	182 / 001	27.5	UNL / FL 140(8 700) Class A, D, G		↓	
Z82 **(RNAV2)** **[GNSS, DME/DME/IRU]** △ JEJU VORTAC(CJU) 332305N 1263727E ▲ PANSI 330014N 1261225E							**Incheon ACC** FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz Airspace Classification refer to ENR 3.1-1
	N/A	230 / 050	31.0	UNL / FL 140(8 700) Class A, D, G		↓	
1. DME GAP : CJU/PANSI, GNSS required.							

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

Change : Information of Z63.

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 Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	6		7
Z83 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC**
△ DALSEONG VORTAC(TGU) 354835N 1283527E							FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz
		192 / 012	19.8	UNL / 5 000(4 900) Class A, D, G		↓	
▲ MASTA 352847N 1283340E		192 / 012	21.2	UNL / 5 000(3 800) Class A, D, G			Airspace Classification refer to ENR 3.1-1
▲ SARAM 350736N 1283147E	N/A	193 / 013	19.1	UNL / 5 000(3 000) Class A, D, G			
▲ ENGOT 344834N 1282952E		188 / 008	10.6	UNL / 5 000(2 300) Class A, D, G	↑		
▲ ANROD 343758N 1282952E							
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.							
Z84 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC**
△ BUSAN VORTAC(PSN) 350721N 1285958E							FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz
	N/A	091 / 272	43.8	UNL / 8 000(3 100) Class A, D, G	↓	↑	Airspace Classification refer to ENR 3.1-1
▲ KALEK(FIR BDRY) 351232N 1295305E							
INCHEON FIR							
FUKUOKA FIR							
Z85 (RNAV2) [GNSS, DME/DME/IRU]							**Incheon ACC**
△ BILUM 334613N 1270439E							FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz
		192 / 012	11.5	UNL / FL 170(1 500) Class A, D, G	↓		
△ PAPLU 333441N 1270337E	N/A	192 / 011	64.5				Airspace Classification refer to ENR 3.1-1
▲ RUGMA(FIR BDRY) 323012N 1265753E						↑	
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 / Lower limits (MOCA) ft AMSL or FL Airspace classification	Direction of cruising levels Odd	Even	Remarks Controlling unit Frequency
1	2	3	4	5	7		10
Z86 (RNAV2) [GNSS, DME/DME/IRU]							**Incheon ACC**
△ BONSO 302840N 1250851E							FREQ : 124.525(132.425) MHz 255.40(233.50, 348.10) MHz
	N/A	181 / 001	28.5	UNL / FL 140(1 500) Class A, D, G		↓	* Note Any aircraft planning to operate below FL 320 after MUGUS must use Z86 between BONSO and ATOTI, then use B576.
▲ ATOTI(FIR BDRY) 300013N 1251154E							
INCHEON FIR							Airspace Classification refer to ENR 3.1-1
FUKUOKA FIR							
1. DME GAP : BONSO/ATOTI, GNSS required.							
Z91 (RNAV2) [GNSS, DME/DME, DME/DME/IRU]							**Daegu ACC**
△ BUSAN VORTAC(PSN) 350721N 1285958E							FREQ : 125.375(125.775, 124.575) MHz 234.15(317.35, 335.50) MHz
	N/A	149 / 329	25.6	UNL / 10 000(3 000) Class A, D, G	↓		Airspace Classification refer to ENR 3.1-1
▲ INVOK(FIR BDRY) 344719N 1291923E						↑	
INCHEON FIR							
FUKUOKA FIR							

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

Change : Information of remarks for Z86.

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 Odd	Direction of cruising levels Even	Remarks Controlling unit Frequency
1	2	3	4	5	7		10
Y590 (RNAV2) [GNSS, DME/DME/IRU]							**Incheon ACC**
FUKUOKA FIR							FREQ : (at or above FL 335) 133.425(132.425) MHz 234.35(234.65) MHz
INCHEON FIR							FREQ : (below FL 335) 125.725(132.825, 128.375) MHz 232.95(233.15) MHz
▲ BEDAR(FIR BDRY) 315401N 1262910E	N/A	263 / 082	28.9	UNL / FL 240(1 500) Class A, G	↑		Airspace Classification refer to ENR 3.1-1
△ ELGEP 314653N 1255617E		262 / 082	14.5				
△ IKEDO 314314N 1253948E		288 / 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.

Change : Information of frequencies.

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