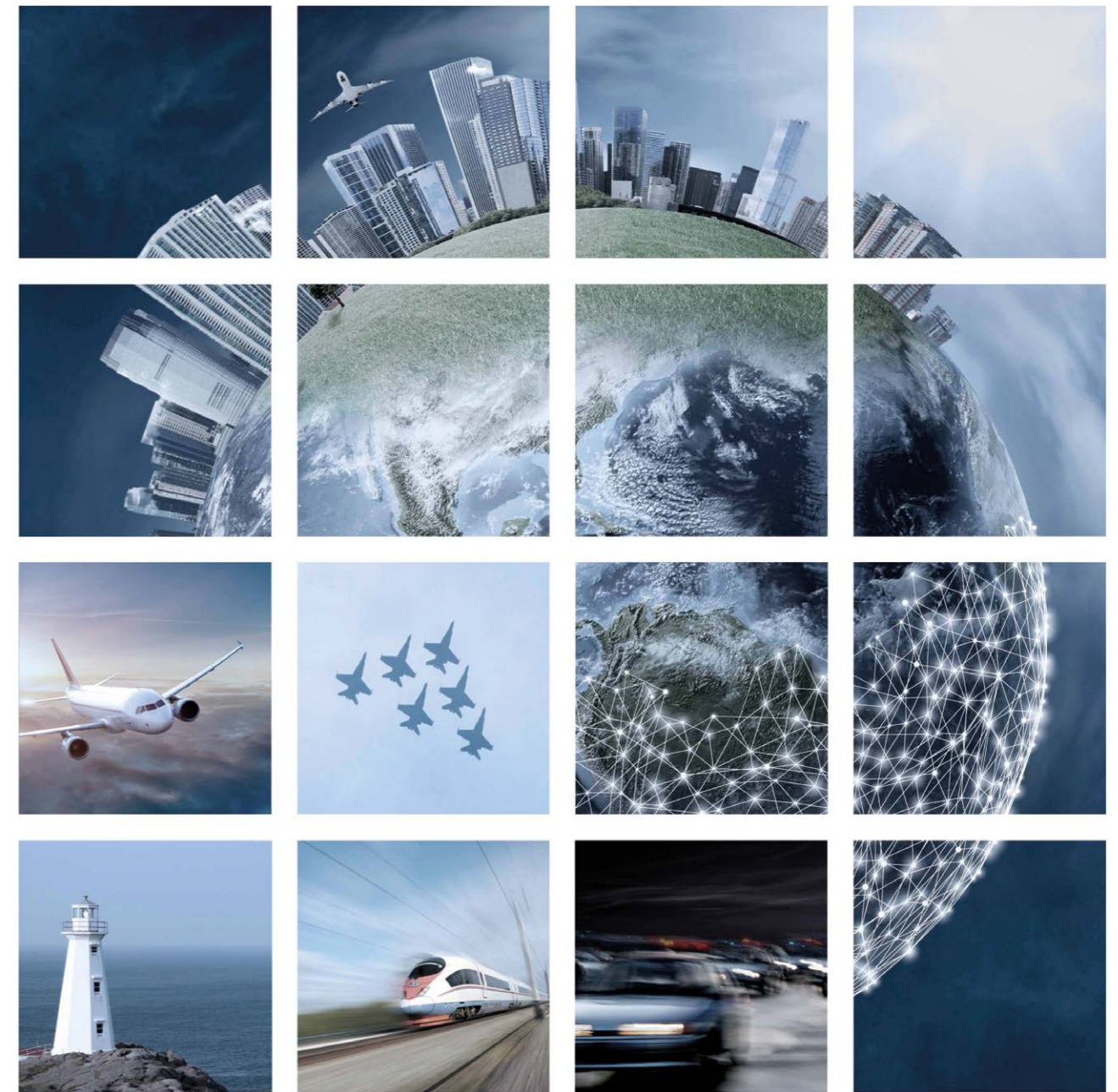


134 countries of activity

■ ATM ■ AIM/AMHS ■ DEF ■ MAR ■ PS ■ PT

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|-------------------------|------------------------|-------------------------------|
| ■ Albania | ■ Greece | ■ Oman |
| ■ Algeria | ■ Greenland | ■ Pakistan |
| ■ Angola | ■ Guinea | ■ Panama |
| ■ Argentina | ■ Haiti | ■ Papua New Guinea |
| ■ Armenia | ■ Honduras | ■ Peru |
| ■ Aruba | ■ Hong Kong | ■ Poland |
| ■ Australia | ■ Hungary | ■ Portugal |
| ■ Austria | ■ Iceland | ■ Puerto Rico |
| ■ Azerbaijan | ■ India | ■ Qatar |
| ■ Bahrain | ■ Indonesia | ■ Romania |
| ■ Bangladesh | ■ Iraq | ■ Russian Federation |
| ■ Belarus | ■ Ireland | ■ Saudi Arabia |
| ■ Belgium | ■ Israel | ■ Serbia |
| ■ Belize | ■ Italy | ■ Sierra Leone |
| ■ Bermuda | ■ Japan | ■ Singapore |
| ■ Bosnia Herzegovina | ■ Jordan | ■ Slovakia |
| ■ Brazil | ■ Kazakhstan | ■ Slovenia |
| ■ Brunei | ■ Korea, Republic of | ■ South Africa |
| ■ Bulgaria | ■ Kosovo | ■ Spain |
| ■ Cameroon | ■ Kuwait | ■ Sri Lanka |
| ■ Canada | ■ Kyrgyzstan | ■ States of Jersey |
| ■ Cape Verde | ■ Latvia | ■ Sweden |
| ■ Caribbean | ■ Lebanon | ■ Switzerland |
| ■ Cayman Islands | ■ Libya | ■ Taiwan |
| ■ Chile | ■ Lithuania | ■ Tajikistan |
| ■ China | ■ Luxembourg | ■ Tanzania |
| ■ Colombia | ■ Macao | ■ Thailand |
| ■ Croatia | ■ Macedonia | ■ The Dominican Republic |
| ■ Curaçao | ■ Malawi | ■ The Netherlands |
| ■ Cuba | ■ Malaysia | ■ The Philippines |
| ■ Cyprus | ■ Maldives | ■ Trinidad and Tobago |
| ■ Czech Republic | ■ Malta | ■ Tunisia |
| ■ Denmark | ■ Mauritius | ■ Turkey |
| ■ Ecuador | ■ Mexico | ■ Turkmenistan |
| ■ Egypt | ■ Moldova | ■ Ukraine |
| ■ Estonia | ■ Mongolia | ■ United Arab Emirates |
| ■ Faroe Islands | ■ Montenegro | ■ United Kingdom |
| ■ Fiji | ■ Morocco | ■ Uruguay |
| ■ Finland | ■ Myanmar | ■ USA |
| ■ France | ■ Namibia | ■ Venezuela |
| ■ French Guiana | ■ Nepal | ■ Vietnam |
| ■ Georgia | ■ Netherlands Antilles | ■ Yemen |
| ■ Germany | ■ New Zealand | ■ Zambia |
| ■ Ghana | ■ Nigeria | ■ Zimbabwe |
| ■ Gibraltar | ■ Norway | |



Selected worldwide references

Communication and information solutions
for a safer world

EXCERPT OF ALL FREQUENTIS REFERENCES AS OF 11/2018

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FREQUENTIS
FOR A SAFER WORLD

Selected worldwide references

■ ATM ■ AIM/AMHS ■ DEF ■ MAR ■ PS ■ PT

AUSTRALIA

- Airservices Australia: Key technology partner OneSKY communication and airfield management, recording, meteorological information system, radio network.
- Qantas FUTURE: Navigational database for flight plan management (based on AIXM 5.1).
- Department of Defence/Air Services Australia: Largest subcontractor in the OneSKY program, the world's first fully integrated civil-military air traffic management system: Main/bypass VCS, airfield management, recording.
- RAAF: Long-term partner for RAAF for RED/BLACK VCS for AD (Vigilare), mobile TWR (TAOT), recording (ADATS). Largest subcontractor in OneSKY program (main/bypass VCS, airfield management, recording).
- AMSA: Global maritime distress and safety system (GMDSS). Integrated solution for voice communication via satellite: DSC, scheduled voice and FAX broadcasts for weather reports and navigational warnings, maritime radio telex service (NBDF).
- Department of Parliamentary Services Canberra: Integrated communication system covering 11% of the world's surface.
- Queensland Rail: Fully redundant digital voice recording, centralised secure archiving.
- Transport for New South Wales: GSM Fixed terminal system for the digital train radio.

AUSTRIA

- Austrocontrol: VCS for all airports including tower and approach Schwechat and ACC Vienna.
- Austrian Armed Forces: Ground-air-ground communication system with RED/BLACK separation, deployable and remote radio sites, nationwide communication systems, control tower systems for the main airbase at Zeltweg, development of the Phoenix command and control system.
- ÖBB: Nationwide incident & crisis management system REM. ECTS L2 system integration.
- DoRIS: Information system for the Danube river.

BELGIUM

- Belgium EAD (EUROCONTROL): Largest AIM system worldwide, shared by 50+ ANSPs and 300+ user organisations. AIXM database, NOTAM, PIB, FPL, AIP and charting based on worldwide data set.

BRAZIL

- CISCEA: Strong partnership providing a countrywide ATM-grade network.

CANADA

- NAV CANADA: Equipment of seven ACCs and 78 towers.
- NAV CANADA: Countrywide AIM operation. AIXM Database, static data management, charting and AIP
- Canadian coast guard: Nationwide system covering 240,000 km – the largest coastline globally, 198 coastal stations with voice and data communications, 100 working positions in all five maritime regions, 1200+ VHF and MF/HF radios.

CHINA

- CAAC: Five ACCs, 20 airports, VTS centre, Beijing CAAC headquarters, joint operations centre.
- MSA: Jiangsu Vessel Traffic System (VTS) extension. Taizhou: River Vessel Traffic System (VTS). Caofeidian: Vessel Traffic System (VTS) integration. Dongguan: Humen port vessel traffic system (VTS). Guangzhou: Shunhai shipyard vessel traffic system (VTS)/Maritime Information System (MIS) terminal. Weihai: MSA, China network operation.

COLOMBIA

- Mindefensa: First nationwide air defence network for Joint Forces (Army, Air Force, Navy). Largest IP-based air defence network in the nation's history. Decentralised architecture, boasting synchronised recording of voice, video and radar. Communication networked via landline, VSAT and microwave. Each operator position accesses each resource for remote voice and radio control of legacy radios.

CZECH REPUBLIC

- ANS: AMHS and weather information management.

DENMARK

- Naviair: AMHS and weather information management.
- Banedanmark (BDK): GSM-R FTS 3020, traffic management system integration for eLDA.

EGYPT

- RIS Nile: Information system for the Nile river.

ESTONIA

- EANS: Modular AIM system including workflow, integrated GIS viewer, digital NOTAM, OPMET, METEO, ADQ compliance, AMHS and flight planning.

FINLAND

- Finnish Transport Agency Liikennevirasto: First bearer-independent communication platform for railway communication in Europe called URCA (Unified Railway Communication and Application). End-to-end solution using the Finnish authorities' telecommunications network VIRVE based on TETRA, as well as public mobile networks.

FRANCE

- DSNA and EUROCONTROL: FABEC-NVCS at Maastricht Upper Area Control Centre (MUAC). The industry's largest fully end-to-end IP VCS.

GERMANY

- DFS: Major supplier for VCS in ACC, APP and towers, DIVOS recording, VXC; radar transmission. First Remote Virtual Tower (RVT) solution for Saarbrücken Airport, with control services carried out from Remote Tower Centre in Leipzig, 400 km away. SDDS-NG surveillance network: Centrally managed distribution of surveillance data through a network connecting four ACC sites, 16 nodes and over 200 users.
- German Airports (ADV): ADQ compliant AIXM 5.1 platform for German airports. Fully redundant Frequentis AIM software functionality delivered via a comprehensive workflow management layer. All German airports use the platform in order to provide AIM data to the German ANSP, DFS.
- German Armed Forces: Major supplier for VCS (KOFA) in miLAC and AD. First National Air Policing Centre (NAPC) solution for airspace incident management.
- Waterways and Maritime Authority (WSA): Bremen, Duisburg and Magdeburg
- HPA: Hamburg Port Authority
- Bavarian Police Command and Control Centres: 3020 LifeX – communication hub at G7 Summit 2015. Merging all operations of analogue radio and German BOS digital radio network 280 web-based radio operator positions.
- North Rhine-Westphalia non-police public safety authorities: Largest UTG concentrator network. Approx. 60 command and control centres, five technical centres providing connectivity to German BOS digital radio network.
- Rhineland-Palatinate control centre network: 15 fully networked and completely resilient control centres.
- Deutsche Bahn AG: First nationwide GSM-R implementation in Europe for the German Federal Railways with more than 2,400 DICORA dispatcher terminals. Worldwide first implementation of the standardised SIP-R (ETSI TS 103 389) architecture between NSS and FTS.

IRELAND

- Irish Coast Guard: Maritime Communication System (MCS)
- Irish Railways: Integration of analogue radio UIC 751-3 and line side telephony.

ITALY

- Civil Protection Agency: Command and Control Centre, Bolzano.

KUWAIT

- DGCA Kuwait: AIXM 5.1 aeronautical information management system for Kuwait Airport.

LATVIA

- LGS: AMHS, weather information and flight plan management.

GREECE

- Hellenic Coast Guard, Search and Rescue Directorate: Maritime Communication System

HONG KONG

- Hong Kong CAD: Mission Critical AIM control centre for Hong Kong Airport. AIXM database, NOTAM, FPL, PIB, charting, AIP and procedure design.

HUNGARY

- NISZ: Georedundant GSM-R FTS 3020

ICELAND

- MRCC Reykjavik: Maritime voice communication system and 30 VHF/MF/HF radio stations, voice recording (DIVOS), full set of tracking and tracing (T&T) modules.

INDIA

- Indian coast guard: Mumbai, Chennai and Port Blair Island Rescue Coordination Centres, Indian Global Maritime Distress and Safety System (GMDSS).

IRELAND

- Irish Coast Guard: Maritime Communication System (MCS)
- Irish Railways: Integration of analogue radio UIC 751-3 and line side telephony.

ITALY

- Civil Protection Agency: Command and Control Centre, Bolzano.

KUWAIT

- DGCA Kuwait: AIXM 5.1 aeronautical information management system for Kuwait Airport.

LATVIA

- LGS: AMHS, weather information and flight plan management.

LITHUANIA

- LitRail: Nationwide georedundant GSM R FTS 3020 solution.

LUXEMBOURG

- CFL: REM incident management system with tighter procedures and faster communications.

NEW ZEALAND

- Airways New Zealand: AIXM database (AIXM 5.1 with AIXM 4.5 compatibility), SDO, NOTAM, weather management, flight planning, briefing, workflow management, charting and eAIP. The AIM system is integrated to existing systems via the AFTN and AMHS messaging protocols.

NORWAY

- NCR – Norwegian Coastal Radio: Nationwide coastline radio for 92,000 km of coast, nine fully-networked VCS 3020-based control centres, 460+ VHF and MF/HF radios for voice and DSC, upgrade to latest geo-redundant, IP-based solution. Partner since 1999.
- Police, Fire and Health Agencies Nødnett: Largest countrywide multiagency control organisation. 800 positions in over 300 control centres.
- JBV: Complete nationwide GSM-R FTS.

OMAN

- PACA: AIXM 5.1 based AIM and AFTN/AMHS message switching system for Muscat and Salalah.
- Sultanate of Oman: New GMDSS and coastal radio network (jointly with partner Qnective Middle East).

POLAND

- PANSA: Five Airports, Warsaw ACC
- GMDSS: MCS 3020 IP communication system with tracking and tracing (T&T), voice recording.
- PKP – Polska Linie Kolejowe S.A.: GSM-R FTS, integration of RADIO STOP function.

PORTUGAL

- NAV Portugal: Five systems ACC/APP/TWR
- IPTM: Countrywide vessel traffic management system for Portugal's coast and large harbours.

QATAR

- QCAA: AIM system for Doha.
- Port of Ras Laffan: Maritime Communication System (MCS)
- NCC: Multiagency national control centre, 187 operator positions, TETRA integration.

RUSSIAN FEDERATION

- RŽD: GSM-R FTS for Sochi Olympics and the Saint Petersburg-Buslovskaya line.

SAUDI ARABIA

- SAR: GSM-R FTR and DIVOS including SMS to functional numbers and DICORA HMI in Arabic/English.

SINGAPORE

- CAAS: AIXM 5 database, AMHS, flight planning, eTOD, NOTAM, briefing office, eAIP, static data management, internet services.
- MPA: Maritime Communication System (MCS) for two Vessel Traffic Centres of the world's busiest port.

SLOVENIA

- Slovenia Control: AIM system, homebriefing complete nationwide GSM-R FTS 3020 solution.

SOUTH AFRICA

- ATNS: Regional system for SADC zone. AIM database, static data management, charting and AIP.

SPAIN

- Marina mercante and 'SASEMAR': Countrywide coastal radio network with full GMDSS functionality for Abertis Telecom, the Spanish maritime radio service provider.
- TP Ferro: Spanish/French HMI on the GSM-R FTS for the line Figueras-Perpignan.

STATES OF JERSEY

- Ports of Jersey: Remote Virtual Tower solution
- Ports of Jersey: Prime for modernisation of vessel traffic management and integrated communications systems. Integrated smartVTS with: SAR, IP telephone system, public address system, TETRA.

SWEDEN

- LFV: AMHS
- SCRN: Interagency solution for SAR, VTS and private organisations. Nationwide, redundant IP-networked MCS 3020 IP communications solution: 13 operator sites, 48 working positions, two geo-redundant technical centres, 65+ remote radio sites (VHF/MF/HF).

SWITZERLAND

- skyguide: AIXM static database with AIP and charting applications.
- FLORAKO program: Countrywide communication ecosystem with three air defence control centres and 16 national radar and radio sites. Replacement of current VCS with IP VCS infrastructure. Modernisation of six airbases with next-generation secure IP VCS.
- Zurich Protection and Rescue: Largest and technically most advanced emergency call centre in Switzerland. POLYCOM digital radio fully integrated into ICCS 3020.
- SBB: First georedundant solution for nationwide implementation.

THE PHILIPPINES

- DOTC: nationwide AIM system, two centre sites.

TUNISIA

- SNCTF: Enhanced SMS text messaging with 640 characters 'Depeches ecrit' for the line Tunis-Sfax.

TURKEY

- TCDD: GSM-R FTS including DIVOS to record dispatcher calls on four major lines.

TURKMENISTAN

- TDY: Integrated public announcement system for twelve stations (dispatcher to terminal) on the Chilmamet-Buzhun line.

UNITED ARAB EMIRATES

- GCAA: AIM System, eAIP, aeronautical chart production in Abu Dhabi, AMHS/AFTN solution.

UNITED KINGDOM

- NATS: En-route control and monitoring system for the UK, nationwide infrastructure program to monitor all 24 NATS en-route radar sites.
- SITA: AMHS
- UCCS: VCS for early detection and response to air vehicles in the UK airspace. CERBERUS project to extend lifetime of the UCCS VCS capabilities.
- Ministry of Defence: Supplier for UK RAF for AD VCS UCCS (UCMP, Cerberus). Supplier of VCS for all UK and overseas dependencies airfields and ATC units (Marshall).
- Port of London: Integrated voice communication system and upgrade to a number of radio sites serving one of the busiest ports in the UK.
- London Metropolitan Police Service: Largest single command and control operation in Europe: 600 positions in three networked centres, LTE/TETRA/CCTV integration.
- North Wales Police: 19 systems for more than 7,000 islands, innovative dispatch centre system, countrywide rollout.
- Network Rail: Countrywide GSM-R system. Geographical redundancy solution (cold standby), role management, interfacing IP-based train describer system for eLDA. IN integration, train and mobile lists, operational messaging based on UUS. Railway Emergency Conference feature, voice broadcasts (IVR), 1,100 DICORA dispatcher terminals (ISDN).

URUGUAY

- Dinacia: AIM system

USA

- FAA: Largest air traffic control VCS rollout program in the world.
- NASA: Mission Operations Voice Enhancement (MOVE) program.
- U.S. Navy: Ruggedised shipboard air traffic control for twelve vessels, six carriers (CVN), six helo-decks (LHD).
- U.S. Army: Part of a multiyear agreement with the Federal Aviation Administration (FAA) under the IVSR contract. Over 20 sites at critical U.S. Army aviation bases equipped with defence VCS, including air information centres (AIC), army radar approach control centers (ARAC) and army ATC towers (ATCT). The VCS 3020X is the only FAA-certified VCS in the market currently in production and deployed at over 120 FAA air traffic control (ATC) facilities.
- Jacksonville Fire & Rescue and Sheriff's Office Florida: 60 seats with PROTECT NG 9-1-1 call taker, for police and fire agencies, handling call volume rate of more than one million calls per year, next generation of map-centric call processing, full-featured call handling, fully integrated GIS, call monitoring and intervening, call taker status views, intelligent speed dials, enhanced dial plan capabilities, and analogue and VoIP gateways.
- US Coast Guard: GMDSS DSC analyser

VIETNAM

- Fire Brigades Dispatch Centers: Countrywide modernisation program to deliver fire protection and medical services. Dispatch centres servicing more than twelve million citizens of Vietnam: four centres, 21 fire stations, mobile equipment and one training centre in Hanoi.