

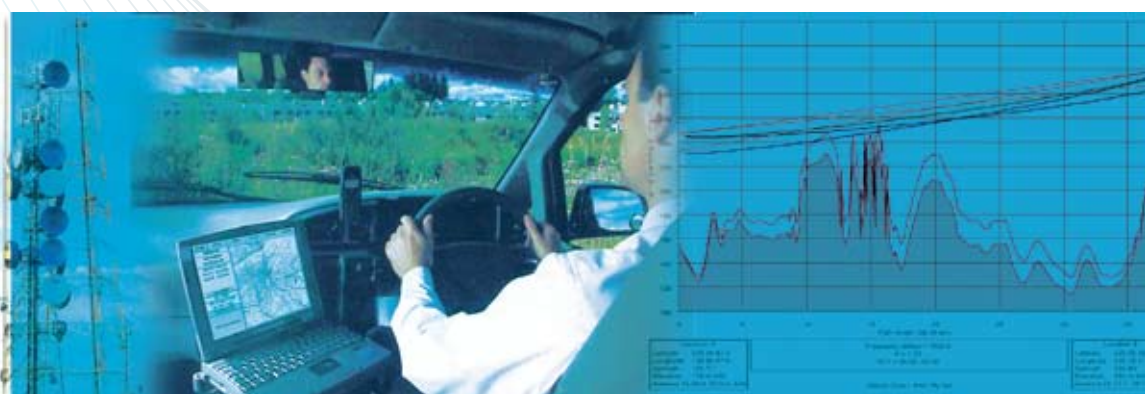
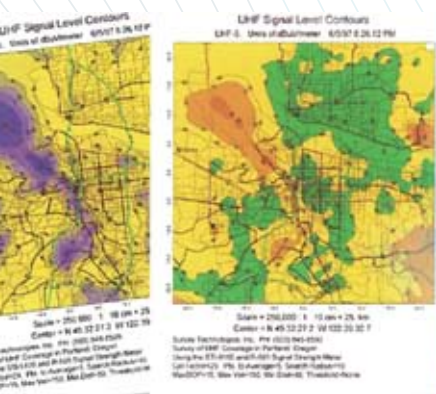
RADIO, WIRELESS & BROADCASTING CAPABILITY



OVERVIEW

Gibson Quai • AAS is the largest specialist Telecommunications consulting company in Australia with more than 20 years of experience, 60 staff and offices in Perth, Adelaide, Melbourne, Canberra, Sydney and Brisbane. GQ•AAS is accredited to the AS/ISO 9001 Quality Standard. Radio, wireless and broadcasting services offered include:

- **Consulting**
- **ACMA Accredited Apparatus Licensing**
- **Radio Coverage Prediction**
- **Microwave Radio Path Profiles**
- **Radio Field Strength & Coverage Measurements**



CONSULTING SERVICES

Radio & Broadcasting Planning, Design & Specification

GQ-AAS's consulting services include technical planning, design and specification services and are available for the entire spectrum of radio and broadcast technologies, including Wi-Fi, Wi-Max, APCO, Tetra, GSM-R, GSM, CDMA, 3G, microwave, satellite and GPS.

In broadcasting, GQ•AAS can assist with planning for new TV and radio (AM and FM) services, providing assistance to broadcasters in preparing submissions to ACMA's Licence Area Plan (LAP) process, transition to digital broadcasting, and modelling for new L-Band and Band III systems.

GQ•AAS can also assist with procurement strategies, tender documentation, tender evaluation, contract negotiations, project and contract management and radio coverage prediction and field measurements.

ACMA ACCREDITED APPARATUS LICENSING SERVICES

GQ•AAS is a licensed frequency assignor under the Australian Communications and Media Authority (ACMA) accreditation framework.

Microwave, UHF & Land Mobile Licensing

GQ•AAS provides a complete and efficient frequency licencing service for fixed links, UHF single channel links and land mobile services. The services include frequency channel pair selection, verification of the proposed link or mobile service for technical and regulatory compliance, site coordinate verification, lodgement of a Spectrum Access Record (SAR) requests with ACMA and Frequency Assignment Certificates (FAC) and apparatus licences.

Microwave Link Pre-Licence Verification

GQ•AAS is able to perform the relevant checks to establish if frequencies are available before clients apply for licences. Services provided by GQ•AAS include determination of carrier to interference margins for suitable channels within a frequency band, site coordinate verification with base maps and existing licenced sites, and the experience to progress to an apparatus licence.

RADIO COVERAGE & PATH LOSS PREDICTION SERVICES

GQ•AAS provides Industry leading radio coverage prediction services using best-of-breed propagation models, detailed terrain analysis producing readable presentation plots.

GQ•AAS uses carrier-grade radio frequency network modelling tools such as Planet EV, Pathloss 4 and MapInfo Professional. Prediction models include CRC-Predict, Okumara-Hata, Longley-Rice (Point-to-Point and Area mode), Free Space, ITU Recommendation 370, Cost 231 (Walfish-Ikegami) and Lee. USA Federal Communications Commission curves can be computed if required.

GQ•AAS is able to source a range of terrain data internally as well as using terrain data sourced by the Client or GQ•AAS can arrange for the acquisition and conversion of terrain data on the client's behalf.

GQ•AAS have developed an Australian nationwide 17-class clutter database derived from 1:250,000 scale data and demographic statistics for approximately every 200 dwellings.

MICROWAVE PATH PROFILES

GQ•AAS's path profile services are used for VHF, UHF and microwave point-to-point and point-to-multi point applications. GQ•AAS uses a leading microwave path profile tool - Pathloss 4.0 - to deliver our detailed path profiling design service.

FIELD MEASUREMENT SERVICES

GQ•AAS provides radio field strength measurement services using a range of signal measurement and analysis equipment configured to individual client requirements. Coverage testing can be provided for most types of radio networks including mobile radio, cellular and Wireless LANs.

THE END PRODUCT

GQ•AAS delivers all reports, path profiles and coverage prediction plots on high-quality colour prints up to A3, or as an electronic MapInfo layer delivered on CD or via e-mail. Larger, hard copy formats are available if required as well as client-supplied background data, such as operational areas, depots, offices, and communications sites, can be shown in the plots.

OUR CLIENTS

| | |
|--------------------------------|------------------------------|
| ABC | 3 GIS MOBILE NETWORK |
| ACMA | NSW GOVERNMENT RADIO NETWORK |
| BROADCAST ENGINEERING SERVICES | OPTUS |
| COMMERCIAL RADIO AUSTRALIA | SOUTHERN BROADCASTERS |
| CHANNEL 7 | TASMANIAN POLICE |
| DBCDE | UNWIRED |

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