Information and Communication Technologies (ICT)

The skills and in-house expertise we have developed enables us to deliver high standard outcomes based on practical, specialised knowledge.

Radio Link Planning
Cardno provides specialist VHF/UHF, microwave, VSAT and satellite link planning, design and implementation.

Our staff are experienced in multiple industry software packages and can design backhaul networks, point to multipoint networks, single point to point links or satellite links.

Our diverse experience across multiple industry sectors means we are well equipped to provide the following services:
- option and feasibility studies;
- business case development;
- technology reviews and equipment selection;
- tender, installation, commissioning and implementation documentation;
- detailed design documentation and drafting;
- network management design;
- line of sight assessments;
- radio field surveys;
- site selection, site surveys and site assessments; and
- radio spectrum license applications.

Radio Frequency Design
Cardno provides specialist radio frequency planning and design to various organisations and have experience in using multiple industry software tools.

We can provide design services for most legacy and current technologies including 2G, 3G, Wimax, Wi-Fi, PMR, APCO25, Tetra and MESH networks. Design services can include tender preparation, and high level and detailed design.

Voice and Data Networks
Cardno provides specialist independent advice in relation to all voice and data systems and solutions, including:
- corporate WAN, LAN and VLAN;
- ethernet;
- security systems;
- telephony systems including voice over internet protocol (VOIP);
- CCTV;
- MATV;
- entertainment systems including triple and quad play;
- public address (PA) systems;
- early warning systems (EWS); and
- telemetry systems.

With experience across numerous industry sectors including government, utilities, vendors and operators, we are well placed to provide services like:
- option and feasibility studies;
- market research and product selection;
- system audits;
- business case development;
- budget estimates;
- detailed costing, design and documentation of networks;
- structured cabling;
- network provisioning and management;
- contractor and vendor management;
- site surveys and site assessments; and
- project management and implementation.

Fibre Optic Networks
Cardno provides specialist independent advice in relation to all fibre optic systems and solutions. We can also provide detailed design and documentation for all fibre optic applications including large backbone networks to smaller building solutions.

Our services include:
- option and feasibility studies;
- system audits;
- business case development;
- budget estimates;
- detailed costing, design and documentation of fibre optic networks;
- active and passive infrastructure design;
- head-end design;
- outdoor plant design;
- contractor and vendor management;
- site surveys and assessments;
- fibre route planning, design and costing;
- structured cabling;
- FTTx network design and costing; and
- project management and implementation.
Cardno is committed to the highest standards of health, safety and environment across all of our business and locations.

Mount Weld Electrical, Communications and Control Systems
Wiluna, WA, Australia

We were engaged by Lynas Corporation to undertake electrical, controls, communications and instrumentation design, procurement, construction and commissioning for the construction of rare earths concentrator process plant, powerstation and accommodation camp facilities at the Mount Weld mine. This included the ICT scope for VHF and UHF radio communication (plant and mine), site communications tower and connection, pointpoint radio links, CCTV, VOIP and corporate IT network.

Cardno’s scope included the following:
> detailed design;
> equipment specifications and procurement;
> production of detailed engineering drawings; and
> installation and commissioning.

T155 Port Upgrade Project
Anderson Point Port Facility, WA, Australia

We were responsible for the design, integration and commissioning of the PLC and SCADA systems and network communications for the Anderson Point Port Facilities T155 Upgrade, as part of the overall development of Fortescue Metals Group’s operations in the Pilbara region of Western Australia. The upgrade included two additional ship loading circuits, two additional train unloading circuits, additional stockpile rows, conveyors, shuttles, sample stations and all related equipment.

The project used latest S88 system design and object oriented programming techniques.

Cardno’s scope included the design of communications systems and controls systems.

TFS Corp Network System Auditing and Design
WA, Australia

TFS Corporation is involved in the cultivation and management of Indian Sandalwood trees for retail and institutional investors. TFS’s corporate head office is located in Perth, Western Australia, with twelve satellite offices located throughout the state that support the company’s plantations and remote operations.

In order to improve business and operational efficiency, TFS required its IT infrastructure to be upgraded to ensure geographical transparency of core network and IT services.

Cardno was contracted by TFS to:
> conduct an audit of all existing IT infrastructure to baseline the current status. The audit will identify current assets, configuration and firmware of network devices as well as determine the connectivity at each location;
> investigate the current identified issues with network equipment connection;
> recommend changes and the means to improve network performance and align with best industry ICT practices for the entire network;
> establish a comparison of the current network communications equipment with improvements to system network changes, before and after;
> identify configuration changes as being passive; not affecting operations; or nonpassive; potentially affecting operations; and
> develop an implementation plan and cost plan to configure and resolve network and connectivity issues.

The ultimate technical outcome of this audit and associated remediation works was to ensure that the current TFS network is able to effectively interoperate with the future changes, and to raise it to a consistent standard that can be effectively administered throughout the company.

About Cardno
Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno’s team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange (ASX: CDD).

www.cardno.com