

## **COMPANY PROFILE.**

- Firm Name : **PARKER INGENIERIA S.A. (or PARKER S.A.)**
- Tax ID : 86.302.400-5
- Established : At the end of 1977 Jorge Parker P., company's main partner, started working as independent engineer in technical advising and at the beginning of 1978 started in marketing activities, acting as agent of overseas manufacturers. On September 1979, to improve the marketing and servicing capability, due to the increase of customer requisitions, the company organization was enlarged to be able to support, in better way, businesses and the after sales support. For this was established the firm **PARKER Y CIA.**, which was changed, at end of 1993, to a stock company called **PARKER S.A.** and now called **PARKER INGENIERIA S.A.**
- Activity : **PARKER INGENIERIA S.A.** is involved in the following activities:
- Engineering, integration and supply (turnkey) of telemetry and remote control (SCADA) systems, including the RTU's integration and PLC programming.
  - Engineering, integration and supply (turnkey) of wireless data transmission systems and wireless data networks (IP/Ethernet) and satellite data transmission.
  - Supply of equipments and devices for telecommunications and transmission, such as: radios, radio modems, modems, wireless bridges, wireless routers, antennas, coaxial cables, instrumentation cables, connectors, interfaces, etc.
  - Supply of power equipments and devices, such as: batteries, rectifiers, battery chargers, inverters, power supplies, VDC-VDC converters, photovoltaic modules, etc.
  - Survey and field strength measuring for radio links study required to implement a reliable wireless radio link. Frequency license procedure at the national authority of telecommunication.
  - Advising and engineering in the implementation of telemetry and remote control system as well as in the implementation of wireless data networks.
  - Electronic and technical representations, in land mobile communications, marine electronics, microwaves, data transmission, fibre optics devices and measuring instruments for telecommunications, as well as satellite communication systems.
  - Training in the installation and maintenance for radio communications systems, in wireless data transmission and in telemetry systems.

- Advising and study of Technical Specifications and Work Technical Inspection in the fields above mentioned.

Staff : For our activity and to give a good technical support to our customers we rely on a team of high qualified and well trained electronic engineers and technicians in the mentioned fields, as much full-time, as part-time and/or contractors. We give after sale support along the country.

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Commercial Reference : Can be requested to Dun & Bradstreet, as well as to our principals and/or to our customers.

### **BRIEF DESCRIPTION OF PARKER INGENIERÍA S.A.**

Our firm was established in 1978 in the fields of marine electronics and in telecommunications, becoming very strong in transmission systems in HF, VHF, UHF, Microwave and Fibre Optics, what enable us to obtain a huge experience and technical capability in data transmission, especially wireless (RF). In 1985, based mainly in the improvement of the industrial technologies, our firm started the development of engineering, software, devices and technologies focused to the industrial automation.

In the automation field, our firm work in last 20 years, quiet and ascendant, and have acquired a huge experience and a strong technical basement in telemetry and remote control systems, concentrating all the activity and efforts in this field since end of 1990.

Our goal always have been to give simple and practical solutions to the industry, supporting our engineering work in the vast experience obtained all the years working in areas like telecommunications, digital systems and data transmission, all them essential tools today for the new automation technologies.

Due to all above, and with our experience, we offer strong support to industry for the implementation of: Telemetry and Remote Control Systems and Wireless Data Transmission to improve their process control

and data networks, doing studies, engineering, supply, installation and commissioning, as well as after sales support and personnel training, in telecommunications, data transmission and automation systems.

**PARKER INGENIERIA S.A. EXPERIENCE IN TELEMETRY AND  
REMOTE CONTROL (SCADA) SYSTEMS AND IN WIRELESS DATA TRANSMISSION.**

The main and noteworthy projects undertaken by Parker Ingeniería S.A. on Telemetry and Remote Control (SCADA) Systems as well as Industrial Automation and Monitoring systems are summarised as follows:

- 2010 Supply and installation (Turnkey) of a telemetry (SCADA) system, fitted with Delta PLC series SA and with wireless data transmission in UHF/FM, for the continuous monitoring and supervision of electrical variables in the high tension lines coming from Caemsa hydraulic generating central.  
**Customer: Empresas Carozzi S.A. (Food Industry).**
- 2009 Survey and field strength measuring for radio links study required to improve the wireless telemetry system, in UHF/FM, of water system from La Peña fresh water treatment plant for the city of Coronel, including the recommendations and specifications of the new equipments and elements to implement for this improvement.  
**Customer: ESSBIO S.A. Water Company.**
- 2009 Supply and installation of a radio modem system for data transmission in UHF/FM for the SCADA system of new waste water treatment plant in the coastal resort of Pichilemu, for the monitoring and control of the waste water impulsion plant, including a data repeater station. Work done for Sielec Ltda.  
**Customer: ESSBIO S.A. Water Company.**
- 2008 Check, testing and regularization of 131 radio modem stations for wireless data transmission of the telemetry (SCADA) system for the fresh water production and distribution in the "Biobio" Region (Province), at south of Chile, including the supply and installation of 18 new stations.  
**Customer: ESSBIO S.A. Water Company.**
- 2008 Survey and field strength measuring for radio links study required to improve the wireless telemetry system, in UHF/FM, of water system of Constitución Harbor, including the recommendations and specifications of the new equipments and elements to implement for this improvement.  
**Customer: Aguas Nuevo Sur S.A. Water Company.**
- 2008 Check, testing and regularization of 70 radio modem stations for wireless data transmission of the telemetry system (SCADA) for the fresh water system in Maule Region (Province), at south of Chile, including the supply and installation of 4 new stations.  
**Customer: Aguas Nuevo Sur S.A. Water Company.**
- 2008 Improvement of the wireless data network in 2.4 GHz for the telemetry systems in the copper cathode development area of the Los Bronces copper mine of Anglo American Mining, consisting in field strength measurement, equipment recommendation and its mounting to increase its reliability.  
**Customer: 3M Chile S.A.**
- 2008 Supply and installation of radio modem system for data transmission in UHF/FM, for 8 recloser units installed on the high tension network poles and one data repeater station, for the SCADA system, in Monte Patria zone, at south of Chile.  
**Customer: Cooperativa Eléctrica Charrua Ltda., work done through the engineering contractor Kyber S.A.**

- 2007 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system, fitted with Modicon PLC units and with wireless data transmission in UHF/FM, for the monitoring and supervision of water flow in open channels and to do the water management of the irrigation system, comprising 7 appraising points, Digua dam water level and 3 computerized Control Centre with SCADA software.  
**Customer: Organización de Usuarios Riego Digua in the city of Parral.**
- 2005 Supply and installation (Turnkey) of a telemetry system for the water production, composed of new canalizations for the new instrumentation, supply of control and power boards, installation of instrumentation and the supply, programming and installation of PLC units in each control board, at Las Condes municipality, in the city of Santiago.  
**Customers: Aguas Cordillera S.A. and Aguas Los Dominicos Water Companies in Santiago city.**
- 2005 Supply, installation and commissioning of a telemetry system integrated of 34 radio modem units in VHF/FM, UHF/FM and wireless Ethernet in 900 MHz, for the SCADA system of the water system of Maule Region (Province), at south of Santiago.  
**Customer: Aguas Nuevo Sur S.A. Water Company, through the contractor Tecnet Chile S.A.**
- 2004 Survey and field strength measuring for radio links study required for the implementation of telemetry and remote control system to be installed in the areas of Arauco and Concepción cities.  
**Customer: ESSBIO S.A. Water Company.**
- 2004 Supply and installation of a wireless (Ethernet) data transmission system and a multimode fibre optic network at the Chacabuquito hydroelectric generating plant, for adding, to the SCADA system, the monitoring of Control and Metering Boards located in the Engine Room, as well as the monitoring of: the Water Loading Tank, the Hurtado Channel Water Intake, the Appraiser and the Level of Las Vizcachas water dam.  
**Customer: Hidroeléctrica Guardia Vieja S.A. (Hydroelectric Generating Company) through the contractor Tecnet Chile S.A.**
- 2004 Supply and installation of a multimode fibre optic data network and a RS-485 data network at Los Maquis power substation for adding, to the SCADA system, the monitoring of the substation's Control and Metering Boards.  
**Customer: Hidroeléctrica Guardia Vieja S.A. (Hydroelectric Generating Company) through the contractor Tecnet Chile S.A.**
- 2003/4 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system (2<sup>nd</sup> Stage), for the water system of Arica city at northern of Chile (in the border with Peru), fitted with Modicon PLC units and with wireless data transmission in UHF/FM, including the supervision and control of 42 works or sites (Remote Units) with a total of 16 wells, one tank (reservoir), one mineral removal filter, 11 new hydraulic pressure regulating valves in the water network, 14 old hydraulic pressure regulating valves in the water network and 2 sewage water treatment plants.  
**Customer: ESSAT S.A. Water Company.**
- 2003 Supply and installation of 4 appraiser stations, each includes a level sensor and a remote unit fitted with Modicon PLC and with wireless data communications in UHF/FM, for the telemetry and remote control system at Corrales water dam for the monitoring of the dam's water level and the water flow at its intake and its delivery for irrigation.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**

- 2003 Supply and installation (Turnkey) of telemetry and remote control system to expand Laja-Diguillin rivers irrigation system, considering 4 new appraisers, each includes a level sensor and a remote unit fitted with Modicon PLC and with wireless data communications in VHF/FM, including also a data repeater station and a supervision and control centre (SCADA) for the continuous monitoring and management of the water flow in open channels for irrigation.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2003 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with Modicon PLC units and with wireless data transmission in UHF/FM, for the fresh water production system of Diego de Almagro village, in northern of Chile, integrated by a Control Centre, 2 remote terminal units (RTU's) and 3 data repeater stations.  
**Customer: EMSSAT S.A. Water Company.**
- 2002 Supply of 4 remote units (RTU's) fitted with Modicon PLC units and with wireless data transmission in UHF/FM, for the continuous monitoring of water flows at the appraisers in dam's water intakes, for adding to the existing telemetry in Corrales water dam, at north of Santiago.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2002 Supply and installation of a telemetry and remote control (SCADA) system fitted with Modicom PLC unit and data transmission via a RS-485 network, for the continuous monitoring of water flow in delivery channel for irrigation of Santa Juana water dam, located in north of Santiago.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2002 Supply and installation of 2 remote units (RTU's) fitted with Modicom PLC and with wireless data transmission in VHF/FM, for a telemetry and remote control (SCADA) system, for the continuous monitoring of water flow in the Laja-Diguillin rivers irrigation system, in south of Chile.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2002 Supply and installation of radio modem units for a new telemetry system fitted on water tanks (reservoirs) installed on three hillsides known as Chepe, Caracol and Lonco, of the La Mochita fresh water treatment plant water system, in the outskirts of the city of Concepcion (south of Chile).  
**Customer: ESSBIO S.A. Water Company.**
- 2002 Modification and update of the telemetry and remote control system of the water system of Arica city, at north of Chile, in the border with Peru.  
**Customer: ESSAT S.A. Water Company.**
- 2002 Supply of a telemetry and remote control system for the control and operation of pumps in the Bolonia fresh water plant in Quillota city (closed to Santiago).  
**Customer: ESVAL S.A. Water Company.**
- 2002 Reconfiguration and reprogramming the PLC unit of the telemetry and remote control system in the copper washings channel of El Teniente copper mine.  
**Customer: El Teniente Division (Copper Mine) of Codelco Chile.**
- 2002 Supply and installation of a radio modem units for the fresh water systems of Penco and Coronel harbours, in south of Chile.  
**Customer: ESSBIO S.A. Water Company.**

- 2002 Survey and field strength measuring for radio links study required for the implementation of a telemetry system to be fitted for the automation of fresh water production and distribution at Penco Harbour, in south of Chile.  
**Customer: ESSBIO S.A. Water Company.**
- 2002 Supply and installation of one Remote Unit (RTU) fitted with Modicon PLC unit and with wireless data transmission in UHF/FM, to measuring the water level in Corrales dam using a submerged pressure transmitter. This RTU was incorporated to the existing telemetry system.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2001 Supply and installation (Turnkey) of a telemetry (SCADA) system fitted with Modicon PLC units and with wireless data transmission in UHF/FM, in Corrales water dam, located in north of Santiago, for the continuous monitoring of water level and flow throughout open channels for irrigation.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2001 Supply and installation (Turnkey) of a telemetry system (SCADA) at Conchi water dam for irrigation, located in north of Chile, to replace the existing one damaged by an alluvium. The new system is for performing variables monitoring and the remote operation functions of the overall dam. The new telemetry system is fitted with Modicon PLC units and with wireless data transmission in UHF/FM, including Variable Frequency Drive (VFD) for the control of delivery valves and the drain sluice gate.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2001 Supply and installation (Turnkey) of a system of 5 radio modems, for data transmission in 900 MHz band (Spread-Spectrum) for the monitoring and control of environmental conditions in the area of Nehuenco thermoelectric generating plant located in centre of Chile, near Santiago.  
**Customer: Empresa Eléctrica Colbún S.A. (Electric Generating Company)**
- 2001 Engineering, supply and installation of equipments and devices to put in automatic operation the telemetry system of El Carmelo fresh water system, located in the outskirts of Iquique (northern Chile), implementing the logic of control to put the entire system in full automatic.  
**Customer: ESSAT S.A. Water Company.**
- 2000 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system, fitted with Modicon PLC units and with wireless data transmission in UHF/FM, at the Paloma water dam located in north of Chile, for the continuous monitoring of the dam water level and to control the delivery valves and its outgoing flow to irrigation Main Channel as well as to control the sluice gates to Camarico irrigation channel and the management of water outflow to this channels.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2000 Supply and installation (Turnkey) of a telemetry (SCADA) system fitted with a Modicom PLC unit and with data transmission through a RS-485 data network, at Puclaro water dam for irrigation, located in north of Chile, for the continuous monitoring of its outgoing flow.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**

- 2000 Supply and installation (Turnkey) of a telemetry and remote control system fitted with Allen-Bradley PLC units and with wireless data transmission in UHF/FM, for the fresh water impulsion from Polpaico water works to Grandon tank (reservoir) in Til-Til village (closed to Santiago).  
**Customer: EMOS S.A. (Santiago's Water Company).**
- 2000 Supply and installation (Turnkey) of a telemetry (SCADA) system fitted with Modicon PLC units and with data transmission through a RS-485 data network, at Conchi water dam for irrigation located in north of Chile, for the continuous monitoring of the water level at the dam and its outgoing flow, as well as to control the drain hatches and the delivery valves.  
**Customer: Dirección de Obras Hidráulicas (Waterworks Directorate of the Chilean Ministry of Public Works).**
- 2000 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system, fitted with a Modicon PLC unit and with wireless data transmission in UHF/FM, for the monitoring of electrical variables from the power substation that provide energy to Carozzi's factory, at Nos area, at southern outskirts of Santiago.  
**Customer: Empresas Carozzi S.A. (Food Company).**
- 2000 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system, fitted with Modicon PLC units and with wireless data transmission in UHF/FM, for the Alimentadora Sur fresh water impulsion system along 28 kilometres, located in the outskirts of Iquique city, considering the supervision and control of 19 hydraulic pressure regulating valves and 2 fresh water tanks (reservoirs).  
**Customer: ESSAT S.A. Water Company.**
- 2000 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system, fitted with Modicon PLC units and with wireless data transmission in UHF/FM as well as through telephone lines, for the fresh water and waste water systems in the city of Iquique (north of Chile), considering the supervision and control of 30 water works, with a total of 6 water tanks (reservoirs) and 24 hydraulic pressure regulating valves in the water distribution network.  
**Customer: ESSAT S.A. Water Company.**
- 2000 Supply and installation of a UHF/FM radio modem system to supervise and control, from a control Centre (SCADA), of 5 recloser units installed on the poles of the high tension (23KV) distribution network in the city of Rancagua.  
**Customer: Compañía General de Electricidad (Electric Power Distribution Company).**
- 1999 Supply and installation (Turnkey) of an expansion of the existing telemetry and remote control (SCADA) system for the cities of San Felipe and Los Andes, fitted with Telemecanique PLC units and with wireless data transmission in UHF/FM, for the automation of the production and distribution of fresh water for this cities, considering the supervision and control of 8 water works with a total of 10 wells, 10 water tanks (reservoirs), one fresh water treatment plant and one waste water treatment plant.  
**Customer: ESVAL S.A. Water Company**
- 1999 Supply and installation (Turnkey) of a telemetry system fitted with Modicon PLC units and with wireless data transmission in UHF/FM, for the monitoring the train approaching to a level crossing to stop trucks cross, in main gate of Carozzi's factory at Nos site, located at south of Santiago.  
**Customer: Empresas Carozzi S.A. (Food Industry).**
- 1998 Engineering, supply, installation, programming and commissioning (Turnkey) of a telemetry and remote control (SCADA) system, fitted with Modicom PLC units and with data transmission by fibre optics, for the monitoring and control of 20 water wells and the pumping

of the water along a pipeline of 100 kilometres long laid at 4,000 metres above sea level. The system also controls 2 water tanks (reservoirs) level, one for loading the pipeline and another for storage. Also it was included the monitoring and control of 3 electric substations, one of 69 KV, another one of 34.5 KV and a last one of 4.16 KV.

**Customer: Minera Escondida Ltda. of BHP Billiton Group (through the Argentinean works contractor Techint).**

1998 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with Modicon PLC unit in the Master Station and with ADAM modules as data acquisition in the remote terminal units (RTU's), with wireless data transmission in UHF/FM, for the control of 7 wells and one water reservoir for the storage of water for the irrigation system for export fruits.

**Customer: Agrícola La Trinidad Ltda. (Farm).**

1998 Supply and installation (Turnkey) of a telemetry and remote control system fitted with Modicon PLC unit in the Master Station and with ADAM modules as data acquisition in the terminal units, with wireless data transmission in UHF/FM, for the control of 2 wells and one water reservoir for the storage of water for the irrigation system for export fruits.

**Customer: Agrícola Las Palmas de Santa Rosa Ltda. (Farm).**

1998 Supply and installation (Turnkey) of a telemetry and remote control system fitted with Telemecanique PLC units and with wireless data transmission in UHF/FM, for the automation of the production and distribution of fresh water to the cities of San Felipe and Los Andes, considering the supervision and control over 8 water works including a total of 16 wells and 8 water tanks (reservoirs).

**Customer: ESVAL S.A. Water Company.**

1997 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system, fitted with ADAM data acquisition and control modules and with wireless data transmission in UHF/FM, for the automation of the production and distribution of fresh water in the city of Arica (northern part of Chile), including the supervision and control over 25 wells, 7 fresh water tanks (reservoir), 2 fresh water pumping (impulsion) stations, one fresh water treatment plant and 3 sewage water pumping (impulsion) station including, also, the monitoring of electrical variables in 22 electrical substations in above wells and plants.

**Customer: ESSAT S.A. Water Company (in northernmost of Chile).**

1997 Supply and installation (Turnkey) of a telemetry system for the flow management in open channels for irrigation at the Azapa Valley, at outskirts of Arica city, in the northern of Chile, fitted with ADAM data acquisition modules and with wireless data transmission in UHF/FM, including 16 remote monitoring stations (appraisers), 2 data repeater stations and one base or master station.

**Customer: La Comunidad de Aguas Canal Azapa (COMCA) (Farmers Organization).**

1997 Supply and installation (Turnkey) of a telemetry system integrated with Arcom RTU's and with wireless data transmission in UHF/FM for the supervision and data acquisition of the copper heap leaching process.

**Customer: Minera Michilla S.A. (Copper Mine).**

1997 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with Modicon PLC units and with wireless data transmission in UHF/FM, for the automation of the water system Estadio Plant to Cerro La Cruz hillside, in Arica city (in the border with Peru).

**Customer: ESSAT S.A. Water Company.**

1997 Installation of a telemetry and remote control system, using dedicated digital telephone lines (ISDN) to monitoring and remote controlling the pressure regulating valves fitted at the Cerro Negro fresh water system.

**Customer: EMOS S.A. (Santiago's Water Company).**



- 1997 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with ADAM data acquisition and control modules, with wireless data transmission in VHF/FM, for the automation, remote control and management, of the flow hatches located at the water intake of the Pullinque hydroelectric power plant.  
**Customer: Electrica Pullinque S.A. (Electrical Power Company).**
- 1997 Supply and installation of radio modems to link, with wireless data transmission in UHF/FM, two nodes of the Santiago natural gas distribution network.  
**Customer: Metrogas S.A. (Natural Gas Distribution Company).**
- 1998 Supply, installation and commissioning (Turnkey) of a telemetry and remote control (SCADA) system, fitted with ADAM data acquisition and control modules and with data transmission in UHF/FM, for the automation of fresh water production in Aguas Verde water works, located in the middle of Atacama desert, in north of Chile, integrated by 4 deep wells, 2 water tanks (reservoirs) and one Control Centre (SCADA), for the supply of fresh water to the harbour of Taltal at 73 kilometres far.  
**Customer: ESSAN S.A. Water Company.**
- 1996 Supply and installation of a telemetry and remote control (SCADA) system, fitted with Allen-Bradley PLC units and with data transmission in UHF/FM, for the automation of the production of fresh water for the city of Quillota, near to Santiago, integrated by 13 wells and 4 water tanks (reservoirs).  
**Customer: ESVAL S.A. Water Company.**
- 1996 Supply, installation and commissioning (Turnkey) of a telemetry and telecontrol (SCADA) system, fitted with Allen-Bradley PLC units and wireless data transmission in UHF/FM, for the automation of 4 water tanks (reservoirs) and 2 impulsion plants for the fresh water distribution in the harbour of Quintero, in the coastal area of Santiago.  
**Customer: ESVAL S.A. Water Company.**
- 1996 Survey and field strength measuring for radio links study required for the implementation of a telemetry system to be fitted at ENAP's gas pipeline coming from Argentina to feed into Methanol Plant in Cabo Negro, passing through several monitoring points and the locations of Posesión, San Gregorio and Punta Arenas, in the area of Tierra del Fuego (Fire Land) in southernmost region of Chile.  
**Customer: Empresa Nacional del Petroleo (Chilean Government Oil Drilling Company).**
- 1996 Supply and installation (Turnkey) of PARKER RMP1200 radio modem units to link wireless Allen-Bradley PLC units for the monitoring of electric parameters at Punta Peuco power substation, in Santiago's rural area.  
**Customer: Cemento Polpaico S.A. (Cement Mill).**
- 1996 Supply, installation and commissioning (Turnkey) of a telemetry system, with wireless data transmission in UHF/FM, for the continuous monitoring of the water level in tanks (reservoirs) in Cerro Caracol (Caracol Hill), for the fresh water supply to Concepción city.  
**Customer: ESSBIO S.A. Water Company.**
- 1996 Supply and installation (Turnkey) of PARKER RMP1200 radio modem units to link wireless Allen-Bradley PLC units, for the supply of sea water to the processing plant, along a 27 kilometres long pipeline, with 3 pumping (impulsion) stations, a data repeater station and one master station, raising the sea water till 1,700 metres above sea level.  
**Customer: Compañía Minera Yolanda (Saltpetre Mine).**
- 1996 Supply and installation (Turnkey) of a telemetry system, with wireless data transmission in UHF/FM, for the continuous monitoring of the water level in the tanks (reservoirs) at the Vallenar iron ore pellet plant.  
**Customer: Cía. Minera del Pacífico (Iron Mine).**

- 1996 Supply of a PARKER RMP1200 radio modem system for the monitoring and control of cranes operating at the Oxides Plant.  
**Customer: Chuquicamata Division (Copper Mine) of Codelco Chile.**
- 1996 Supply and installation (Turnkey) of a PARKER RMP1200 radio modems system for the data transmission between Modicom PLC units, for the water supply to Andacollo Copper Project, integrated by 5 pumping (impulsion) stations, one data repeater station and one Master Station, along a 29 kilometres long water pipeline for raising the water over 2,000 metres above sea level.  
**Customer: Compañía Minera Carmen de Andacollo (Copper Mine)**
- 1996 Supply and installation (Turnkey) of a data acquisition system using telephone lines and ADAM data acquisition modules for monitoring of variables in the fresh water distribution network in the city of Talca, at south of Chile.  
**Customer: ESSAM S.A. Water Company.**
- 1995 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with PLC Mitsubishi units and wireless data transmission in UHF/FM, for the control of fresh water production for the town of San Rosendo, at south of Chile.  
**Customer: ESSBIO S.A. Water Company.**
- 1995 Supply and installation (Turnkey) of a telemetry and remote control, with wireless data transmission in VHF/FM, for the environmental supervision and control of Caletones Copper Foundry, with remote monitoring stations installed in the mountains at Andes Chain.  
**Customer: El Teniente Division (Copper Mine) of Codelco Chile.**
- 1995 Supply of a PARKER RMP1200 radio modems system for wireless data transmission between PLC units, for the production of fresh water for the city of Melipilla, near to Santiago.  
**Customer: EMOS S.A. Water Company.**
- 1995 Supply and installation (Turnkey) of a wireless telemetry and remote control system for the operation control of motorized valves at Talcahuano tank (reservoir) located in Chepe Hill, in Concepcion city, at south of Chile.  
**Customer: ESSBIO S.A. Water Company.**
- 1995 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with Mitsubishi PLC units and data transmission in UHF/FM, for the automation of fresh water system in the coastal resort of El Quisco, in the coastal area of Santiago.  
**Customer: Aguas Quinta S.A. Water Company.**
- 1995 Supply of PARKER RMP1200 radio modems system for data transmission between PLC units, for the fresh water production of Las Cabras, district of Rancagua city, at south of Santiago.  
**Customer: ESSEL S.A. Water Company.**
- 1995 Supply and installation (Turnkey) of a telemetry and remote control system, with data transmission in UHF/FM, for the fresh water production of Machali district of Rancagua city, at south of Santiago.  
**Customer: ESSEL S.A. Water Company.**
- 1995 Supply of a control system using ADAM data acquisition and control modules for the Exchange Station at Colon Alto site, at El Teniente copper mine.  
**Customer: El Teniente Division (Copper Mine) of Codelco Chile.**
- 1995 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with data transmission in UHF/FM, for the automation of Pedro de Valdivia fresh water impulsion plant and tank (reservoir), with a SCADA system, in Temuco city, at south of Chile.  
**Customer: ESSAR S.A. Water Company.**

- 1995 Supply and installation (Turnkey) of an expansion of the telemetry and remote control system, fitted with a data transmission in UHF/FM, for the fresh water distribution in the district of Quinchamali, in Santiago, with data link via radio to the Centralized Control Centre (SCADA) in Vitacura Water Treatment Plant.  
**Customer: Agua Potable Lo Castillo S.A. (Water Company in Santiago).**
- 1995 Expansion of the telemetry and remote control system, with data transmission in VHF/FM, for the automation of the traffic lights on the road Carretera del Cobre that ascend from Rancagua city to El Teniente Mine, at Andes Chain.  
**Customer: El Teniente Division (Copper Mine) of Codelco Chile.**
- 1995 Supply and installation (Turnkey) of a PARKER RMP1200 radio modems system for the wireless data transmission between PLC units for fresh water production from deep wells at the Huilco-Huechun water works in the city of Melipilla (closed to Santiago).  
**Customer: EMOS S.A., Santiago's Water Company.**
- 1995 Supply of radio modem units for wireless data transmission between PLC units.  
**Customer: Electra S.A. (Supplier of Equipments for Industry)**
- 1995 Supply and installation (Turnkey) of a data transmission repeater station to link remote units fitted with PLC's and the Centralized Control Centre (SCADA) located in Vitacura Fresh Water Treatment Plant.  
**Customer: Agua Potable Lo Castillo S.A. (Water Company in Santiago).**
- 1995 Supply and installation (Turnkey) of a PARKER RMP1200 radio modems system for wireless data transmission between Allen Bradley PLC units, for the water supply system for Verde Gold mining project, integrated by 3 pumping stations, 2 repeater stations, a water pond and a 25 kilometres long water pipeline used for raising-up the water to 4,500 metres above sea level.  
**Customer: Minera Maricunga (copper and gold mine at north of Chile).**
- 1994 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with ADAM data acquisition and control modules and with data transmission in UHF/FM, for centralize operation (SCADA) of water pumps of the systems: Lo Curro water tanks, La Aguada water impulsion system and the wells Riesco, Espoz, El Gabino and El Roble.  
**Customer: Agua Potable Lo Castillo S.A. (Water Company in Santiago).**
- 1994 Supply and installation of a PARKER RMP1200 radio modems system for data transmission in VHF/FM for the Electrical Power Dispatching System between Coya Generating Plant and the remote transmission units (RTU) monitoring the power distribution network.  
**Customer: El Teniente Division (Copper Mine) of Codelco Chile.**
- 1994 Supply of a wireless remote control system for Manantial-Caletones filter plant for copper refining process.  
**Customer: El Teniente Division (Copper Mine) of Codelco Chile.**
- 1994 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system, fitted with wireless data transmission in UHF/FM, for the transmission of security alarm from high towers in the crossing of Chacao channel with high tension power lines.  
**Customer: Transelec S.A. (Electrical Power Transmission Company).**
- 1994 Supply and installation (Turnkey) of a telemetry system, fitted with wireless data transmission in UHF/FM, to monitoring the level in water tanks located in Chepe hill from La Mochita fresh water treatment plant, for the water supply of Concepción city (south of Chile).  
**Customer: ESSBIO S.A. Water Company.**
- 1994 Supply of PARKER RMP1200 radio modem units to be used by the Ministry of Education during the implementation of its project known as Enlaces (Links).  
**Customer: Chilean Ministry of Education.**

- 1994 Development, supply and installation (Turnkey) of a monitoring system to detect the sediment level at the dam of El Alfafal hydroelectric power station, fitted with wireless data transmission.  
**Customer: Chilgener S.A., work through contractor Impsa from Argentina.**
- 1994 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with wireless data transmission in VHF/FM, for fresh water system in San Jose de Maipo village, close to Santiago.  
**Customer: EMOS S.A., Santiago's Water Company.**
- 1994 Supply of PARKER RMP1200 radio modem units for wireless data transmission of the meteorological station at Mataverí airport in Easter Island.  
**Customer: Dirección Meteorológica de Chile (Chile Meteorological Administration).**
- 1994 Supply and installation (Turnkey) of a Centralized Monitoring (SCADA) system to monitoring water tanks located in districts of Vitacura and Huechuraba in Santiago city, fitted with ADAM data acquisition and control modules and with wireless data transmission in UHF/FM.  
**Customer: Agua Potable Lo Castillo S.A. (Water Company in Santiago).**
- 1994 Supply and installation (Turnkey) of a telemetry and remote control system, with data transmission in VHF/FM, for the automation of the traffic lights on the road Carretera del Cobre that ascend from Rancagua city to El Teniente Mine, at Andes Chain.  
**Customer: El Teniente Division (Copper Mine) of Codelco Chile.**
- 1993 Manufacture and supply of PARKER RMP1200 radio modem units.  
**Customer: Linktronic Ltda. (Engineering Company).**
- 1993 Manufacture and supply of PARKER RMP1200 radio modem units, in UHF/FM, for the automation of fresh water production in Rio Claro area in Talca city.  
**Customer: ESSAM S.A. Water Company.**
- 1993 Integrate and supply of radio modem units, in VHF/FM, for the automation of the fresh water production plant in La Calera city.  
**Customer: ESVAL S.A. Water Company.**
- 1993 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with data transmission in VHF/FM, for the automation of crane bridges used in Potrerillos Copper Foundry.  
**Customer: El Salvador Division (Copper Mine) of Codelco Chile.**
- 1993 Manufacture and supply of PARKER RMP1200 radio modem units for data transmission between computers stations.  
**Customer: Linktronic Ltda. (Engineering Company)**
- 1993 Supply and installation (Turnkey) of a telemetry and remote control system, fitted with wireless data transmission in VHF/FM, for the automation of fresh water production in Union city, at south of Chile, working for the engineering company Hidrosan Construcciones.  
**Customer: ESSAL S.A. Water Company.**
- 1992-93 Advise and development of the technical study and engineering for a SCADA system for the automation of fresh water production and distribution in Temuco city, south of Chile:  
**Customer: ESSAR S.A. Water Company.**
- 1992 Supply and installation of a telemetry and remote control system, fitted with data transmission in VHF/FM, for the monitoring and remote operation of repeater stations of a radio communications network at Andes Chain, closed to Santiago.  
**Customer: El Teniente Division (Copper Mine) of Codelco Chile.**

- 1992 Supply and installation (Turnkey) of a telemetry and remote control (SCADA) system, with wireless data transmission in UHF/FM, for fresh water treatment plant in Padre Las Casas, at south of Chile.  
**Customer: ESSAR S.A. Water Company.**
- 1992 Supply and installation (Turnkey) of a telemetry and remote control system, with wireless data transmission in VHF/FM, for Flexo Project at Potrerillos Copper Foundry (at Flash Furnace Section).  
**Customer: El Salvador Division (Copper Mine) of Codelco Chile.**
- 1991 Supply and installation (Turnkey) of a telemetry and remote control system, with wireless data transmission in VHF/FM, for the monitoring and control of water wells in the area of Colmo River and the water pipeline to the copper foundry plant in Ventanas coastal area, at 20 kilometres far.  
**Customer: ENAMI Ventanas Copper Foundry.**
- 1987 Development and supply of 10 interface units for a telemetry system.  
**Customer: ESVAL S.A. Water Company.**
- 1986 Development, supply and installation (Turnkey) of a telemetry system (SCADA) (1<sup>st</sup> Stage), fitted with a 6 remote units (RTU's) and Computerized Control Centre, with wireless data transmission in VHF/FM.  
**Customer: ESVAL S.A. Water Company.**
- 1985 Supply and installation of a discrete fresh water tank level monitoring system, linked via radio in VHF/FM.  
**Customer: SENDOS Water Company (Chilean Government).**
- 1985 Supply and installation of an ON-OFF fresh water tank control system, linked via radio in VHF/FM.  
**Customer: SENDOS Water Company (Chilean Government).**