

# ORBITAL

A thin black arc with a small dot at its end, positioned below the word "ORBITAL".

Remote Telemetry Units

**IRIS-RTU** - Designed by utility engineers FOR the gas and utility industries



➤  
“The IRIS-RTU incorporates reliable, local processing power with the advanced communications of an RTU for an all-in-one high-performance solution.”

IRIS-RTU features evolutionary, accessible and intuitive browser driven software. This simplicity and ease of use enables seamless integration with versatile input/output modules - allowing this RTU to be used for a range of tasks from the simple to the most demanding and complicated of applications.

IRIS-RTU has been designed from the “ground up” to offer improvements in efficiency, reduce operating costs, enhance stability, augment security and most importantly- ameliorate the interface between sites, control room and operatives at all levels and locations.

IRIS-RTU provides a single ‘one-size-fits-all’ software solution with all site specific differences being handled by configuration settings and content files.

IRIS-RTU can be expanded with multiple, simultaneously operating communication ports in a range of industry protocols. The communication capability is specifically designed for stable, secure communications over diverse networks.



**IRIS-RTU – A cohesive vision of your asset.**

Enabling a secure, straightforward flow of mission critical information between control room, site or home.

From the control room to the asset- communicating with IRIS is simple and intuitive

Innovative, efficient and cost effective



“The software architecture of IRIS is flexible and open source meaning it can be deployed for a wide range of applications with NO add on costs, NO software licencing issues and NO special hardware or software demands.” –

It's fully accessible and configurable from within most internet browsers - you simply connect to the site and its app style menus allow swift data access, retrieval, analysis and easy fault reporting.

On site the user has easy access via a touchscreen interface which enables instant viewing of all the local data. This clear, logical and human friendly interface (with site specific mimic) means easy transition to IRIS, with very limited training necessary and no hardware specific specialists are required.

Everything the user needs is embedded within IRIS and accessed by app style buttons - There are no tables or registers to input, no lines of code to enter and, at site, no laptop is required to interface and diagnose IRIS.



“Traditionally fault diagnosis was a trial and error activity and required site attendance followed by procurement of parts, returns to site and usually involved some form of reprogramming – IRIS is different.”

The fault can be diagnosed anywhere in the world by any authorised user with a PC/Tablet... All you need is a compatible internet browser and an internet connection – Hence IRIS is effectively a free roll out to all your technicians! Once a fault is identified the technician can request the relevant part, collect it and proceed straight to site where efficient repair can be undertaken, minimising cost and reducing unnecessary travel.

With IRIS you have –

- NO licencing costs – either per site or per user
- NO additional software costs for future expansion
- NO specialist knowledge needed – VERY simple training

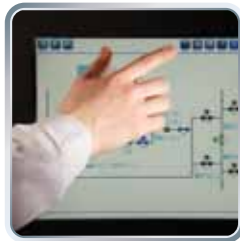
- NO specialist hardware required for remote access or site intervention ANY Laptop/PC with a web browser and network connectivity will suffice
- Precise remote fault finding means no wasted journeys with tangible savings to your CO2 footprint

Planned maintenance is easy to schedule, monitor and control. IRIS offers zero cost asset and incident management data as any configuration changes are automatically transferred, logged and securely stored.

All this means that a broader range of personnel are available for diagnosis and repair as no highly skilled technicians are needed for most support activities and there are no prohibitive software licencing issues.

“It's as easy as 1,2,3”

›1



Enter the menu

›2



Call up the component

›3



See the data/information relevant to your query or data you wish to analyse in real time

We designed IRIS to be robust, future proof and for easy maintenance

Shared, Secure, remote data where you need it without excessive bandwidth



“IRIS is constructed with state of the art, industrial specification components from globally recognised suppliers and is designed to amalgamate stability, reliability and ease of use over the life cycle of the product.”

Each component has been rigorously examined before it is selected with an in depth technical analysis undertaken to determine the optimum platform.

Throughout IRIS the use of dual redundant systems, smart technology and simple layout means that, in the future, should a component need replacement the procedure is simple and efficient.

Examples of this philosophy include -

The site I/O modules feature local and remote failure detection with “Hot” swap of both hardware and associated software configuration – In fact – exchange of a failed module will typically take less than a minute at which point the module synchronises with the main processor and updates its configuration seamlessly so no further action is necessary.

The smart main processor is configured in full hot swap mode with no need for reprogramming, no external device for configuration and no specialist skills required – simply remove the defective module, replace with a new unit.

“Simple swapping of Smart main processor.”

➤1



Unplug 3 connections and loosen 2 fasteners

➤2



Remove defective unit and return for disposal

➤3



Insert replacement processor

➤4



Connect replacement and 3 minutes later IRIS is fully redundant once more



“Direct remote access to site traditionally presents real security issues - Orbital’s solution is to provide a proxy server hosted at a central location that the engineer connects to via established password and encryption protocols.”

The remote access server and the local HMI utilise the same HTML files, therefore what the engineer sees remotely is the same as what he would see on the local HMI. The only software required on the engineer’s laptop to access the information is a web-browser such as Internet Explorer /Firefox. There are no licensing charges and no special software or hardware is required.

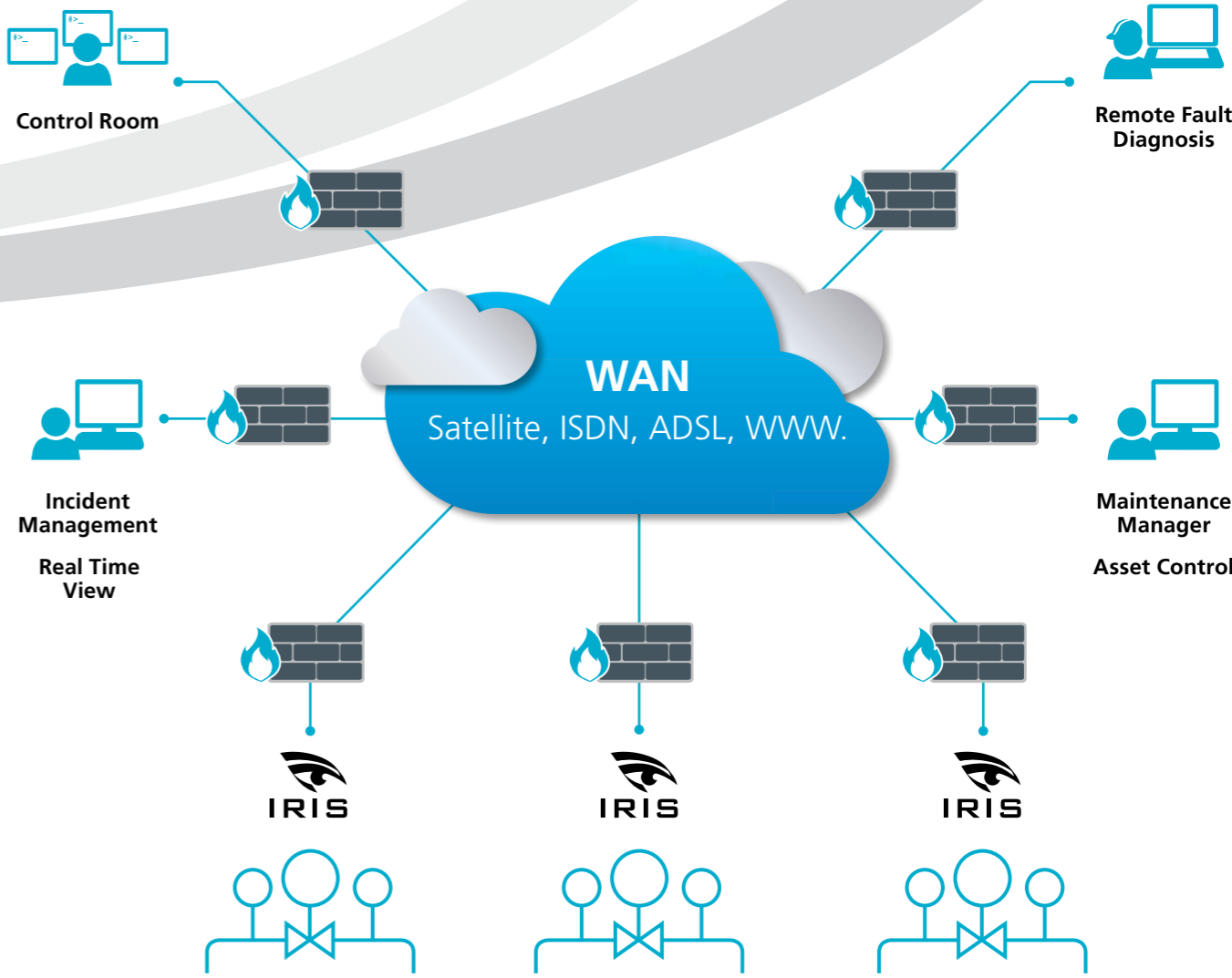
The proxy server polls the IRIS-RTU for exactly the same data as the local HMI would display monitoring all relevant data and controlling remote access to each site. Since there is no direct access to the site equipment, every data request and configuration change can be controlled and managed from a central point.

The existing authorisation/authentication infrastructure of the client can be utilised for the remote access connection which, when combined with the use of a single protocol over the WAN (Modbus/TCP), ensures the system can be locked down significantly reducing the possibility of data being compromised.

An added benefit of this philosophy is Efficient Use of Bandwidth: Because the proxy controls the polling rate, and the Modbus protocol is only passing data, rather than presentation information, the amount of traffic over the remote connection to site is kept to a minimum.



# IRIS-Asset Management Suite – You're virtual on site presence



➤ "IRIS has been designed from the ground up to enhance the traditional role of an RTU. Within IRIS an Oracle database continually logs and date stamps all critical site activities. IRIS also records the identity of all the relevant systems it is monitoring and logs any changes that have been made to the site configuration."

**All this important data is periodically retrieved by the IRIS-AMS asset management suite –**

A centralised server application which operates independently of the central SCADA desk but in tandem with the RTU distributed network.

**Selected key functions of IRIS-AMS**

IRIS-AMS exactly replicates both the appearance and the functionality of the local HMI enabling a remote user to securely and safely interrogate the IRIS located on a (potentially) distant site.

IRIS-AMS retains a complete history of activities and configurations on a site-by-site basis as well as generating a concise "real time" status of all pertinent assets on an equipment by equipment basis.

IRIS-AMS effectively becomes a "Virtual man on site" allowing designated users to interface with individual sites in some depth.

IRIS-AMS preserves a secure copy of the system configuration and each site specific Modbus register. In the event of a catastrophic failure where an IRIS-RTU may be damaged or corrupted- the site can be quickly re-configured.

IRIS-AMS is secure, stable and compatible with proxy server/vpn/firewall protocols.

Remote sites from one to thousands of locations

# Complete IRIS Solutions



# Examples of where to use IRIS



“As one of the largest system integration providers in the UK industrial utilities market, Orbital have the experience, resources and infra-structure that allow us to offer a complete IRIS-RTU solution.”

Our team of highly experienced specialists will take the project from conception and working with your engineers develop an innovative IRIS solution which fully complies with the demands of your application.

We can supply IRIS in a support package suitable for your specification, the site, any environment or Location – For example: kiosk build, hazardous area applications, remote sites or coastal installations.

Orbital has significantly invested in an extensive simulation system at our centrally located facility. We can exactly replicate all signals on your site allowing us to manufacture your IRIS-RTU, pre-configure the unit and undertake a full FAT (including end to end test with your control room/ scada system) before the unit even arrives at site.

Meanwhile our site installation teams, upon request, can schedule and undertake the civils, electrical and mechanical hook up, transportation and final installation to ensure the seamless integration of IRIS with nominal downtime and minimal impact.

**From inception to completion Orbital and IRIS can offer performance, flexibility and value beyond cost.**



### Water and Wastewater:

Improve distribution system or collection system operation, optimize treatment plants, water treatment (chemical and energy savings), and Landfill sites.

### Electric power distribution:

Controlling load break switchgear, reclosers and other IEDs (intelligent electronic devices) at substations or pad.

### Oil & gas pipelines:

Monitor and control flow, pressure, Gas properties (biogas\biomethane) perform emergency shutdowns, monitor remote exploration and storage sites.

### Communication network monitoring and control:

Perform remote monitoring of critical equipment such as power systems, environmental control systems, tower lights, etc.

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