



**Energy Metering
Technology Ltd**

Visibility for utilities management

TURNKEY

The one stop shop for all your metering solutions



Complete Turn Key utility meter solutions from meter strategy development, meter installation and AMR installation to meter data analysis software supply and set-up

“TURN KEY UTILITY METERING SERVICES AND SOLUTIONS, ALL YOUR METERING NEEDS FROM ONE RELIABLE SOURCE”

Meter Surveys and Meter Strategy Development

EMT recommends that you have a metering strategy and action plan for developing your aM&T. To assist you with this we provide meter survey/consultancy services to:

- Assess all existing meters both fiscal and sub meters and advise on suitability and connectivity for automatic meter reading
- Meter Operator liaison service to get AMR interface to fiscal meters
- Study your services distribution systems to assess where to strategically locate sub-meters for greatest impact
- Assistance in choosing the right meter for the application
- Assess the best comms option for automatic meter reading
- Price estimates for meter installation and AMR provision
- Review of metering vs. statutory requirements e.g. Part L Building Regulation
- aM&T system specification service

System Training

On site training is provided to enable customers to take full advantage of the rich features of DYNAMATplus.

All our training sessions are tailor made to suit customer requirements for all levels, from beginners to advanced.

On-going Annual Support

Once installed EMT like to see our systems being used well and efficiently. To assist our Customers, after initial installation, we offer two annual contracts:

DATA BIRD Data Warehousing & Maintenance – three facets, separate warehousing of meter data, assessment of AMR faults at no additional cost to repair and finally assistance with meter repair when meter faults are found.

DYNAMAT Software Support – using a switchable, remote desktop access (i.e. When you want, we can remotely grab hold of your keyboard), telephone support for DYNAMAT, no additional cost upgrades, and recovery of missing data.

Bill Verification and Billing

The finance module of DYNAMATplus can provide both bill checking and billing creation when sub-billing is required. The finance module can cope with any common tariff structure and is updated when the Government moves the “goal posts” e.g. VAT, CCL etc. The output has been used many times to challenge Utility Companies should any discrepancies be found.

Meter Provision and Installation Service

Service metering is a relatively specialist engineering activity and there is a bewildering maze of meters to choose from. At EMT 'we know meters' and know how to install them. We provide a meter provision and supply service we call "meter enabling works" which includes:

- Choosing the right meter for the application
- Meter Operator liaison service to get AMR interface to fiscal meters
- Installation service for any utility and any meter type
- Shutdown arrangements and "out of normal hours" working for time sensitive services
- Building of bespoke, 'off site' multi meter panels
- Supply and fitting of meter ancillaries to get meter pulse output, e.g. OCR devices, intrinsically safe relays, pulse splitters etc.
- Recognised MPU works for gas meters

Fiscal Meter Interface – "Consumer Rules OK!"

We would recommend that you automatically read and reconcile all "boundary", fiscal meters so that you have a better handle on your consumptions than your Utility Suppliers and you, the consumer, 'rules', not the Utility Company!

When interfacing to fiscal meters, Utility Companies and fiscal Meter Operators are notorious for liaison problems. EMT has been "championing" the Consumers access to the fiscal meters for many years and knows what procedures and processes have to be followed to get fiscal meter interface. So leave fiscal meter interface to us!



DATA BIRD Automatic Meter Reading Systems

Automatic meter reading turns an "idle asset" meter into a "work horse" for utilities management. EMT supply, install and commission Automatic Meter Reading (AMR) systems using various comms technologies including;

- DATA BIRD low power radio – ideal for campus sites, towns and cities
- DATA BIRD Hardwired, 'daisy chained' meters – office blocks and apartments
- Network and/or GPRS based loggers – small, single or multi location sites

AMR hardware is installed adjacent to the meters and interfaced via either pulse output or serial connection to enable automatic meter reading. The AMR is connected to a PC via a variety of different comms methods to allow automatic meter reading.

EMT's AMR systems are 'LEGO' like in structure and can be grown as budget and needs mature.

DYNAMATplus and DYNAMATlite Meter Data Analyses Software

DYNAMATplus is for deep analyses and includes normal standard M&T analyses as well as EMT's proprietary analyses such as TRACKERTM, the 'self learning' targeting tool. A variety of extra modules are also available such as Decsterity (Display Energy Certificate Module), Applicable days and Email alarms for out of hours consumption.

DYNAMATlite is for more basic use by the occasional user. It is web based, easy to use and does not require any official training sessions. It is a less sophisticated, 'viewing window' into DYNAMATplus.

Whilst our software programs can be used with any CSV based automatic meter reading system, for consumption, cost, billing and pollutant assessment, the DYNAMAT programs are the ultimate analysis tool to compliment EMT's DATA BIRD systems.



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DATA BIRD

Automatic Utilities Meter Reading System



DATA BIRD the proven, award winning, multi utility automatic meter reading system for any size or shape of estate from cities and factories to domestic dwellings.

How DATABIRD Works

The way the system works is to automatically read utility meters regularly, normally every 30 minutes, to create consumption data that allows deep, automatic, 'on the fly' consumption analysis, effectively replacing human 'eyes' and 'brains'.

In order to automatically read the meters the DATABIRD deploys low cost, low power radio and/or hard-wired meter interface modules that send information back to a central receiver/data logger. The logger is then automatically downloaded to your PCs/servers via GPRS and the Internet, to be automatically analysed by DYNAMAT, EMT's meter data analysis software.

The modules include battery only powered, Short transmit range transmitters (DATACHICK (Type1) – Type 1), solar or mains powered Long range transmitters (DATABIRD – Type 2), Long range repeaters (DATABIRD – Type 3) and, where there is an extensive cluster of meters or a "Hardwired only" DATABIRD system, Hardwired "slave cards" (DATACARD - Type 4) that send meter reading data to a central DATA BIRD receiver/ data logger.

A standard Type 1 can pick-up up to 4 meters and also has a temperature sensor/analogue channel. Any standard DATABIRD module (Type 2, 3, 4 and central logger) has 8 meter capability with a temperature sensor and 2 further analogue channels. All our modules can be interfaced with each other.

The system is very 'LEGO' like in its capability; once the DATABIRD 'base plate' is laid the DATABIRD low power radio and hard-wired communication modules can be put together to allow meters on any size of building or estate to be automatically read. Expansion is simply enabled by adding further modules.

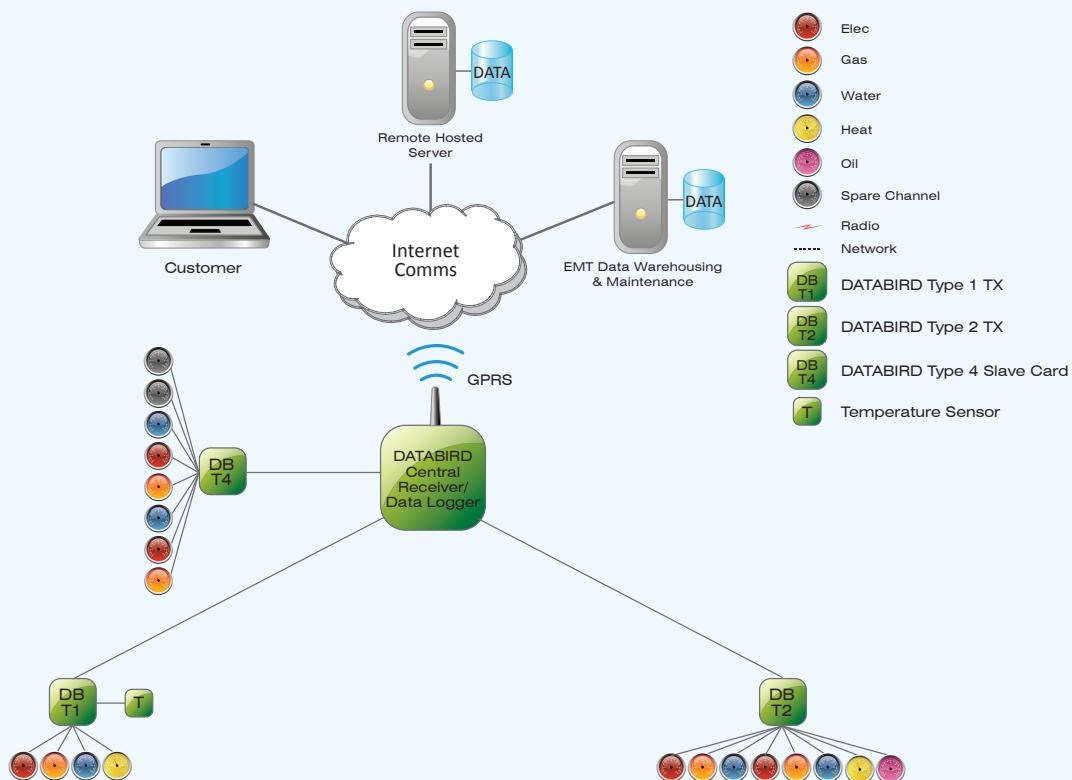
The DATABIRD central data logger/receiver module is connected to the host PC running DYNAMAT software via GPRS, Hardwire/network or modem. To secure collected meter data, the data logger is configured to provide a 'buffer' data store of a minimum of 28 days.

For local degree hour/day analysis, any of the DATABIRD modules can be fitted with a temperature sensor; a standard feature of DYNAMAT calculates the degree hours/days and conducts degree-day regression analysis.

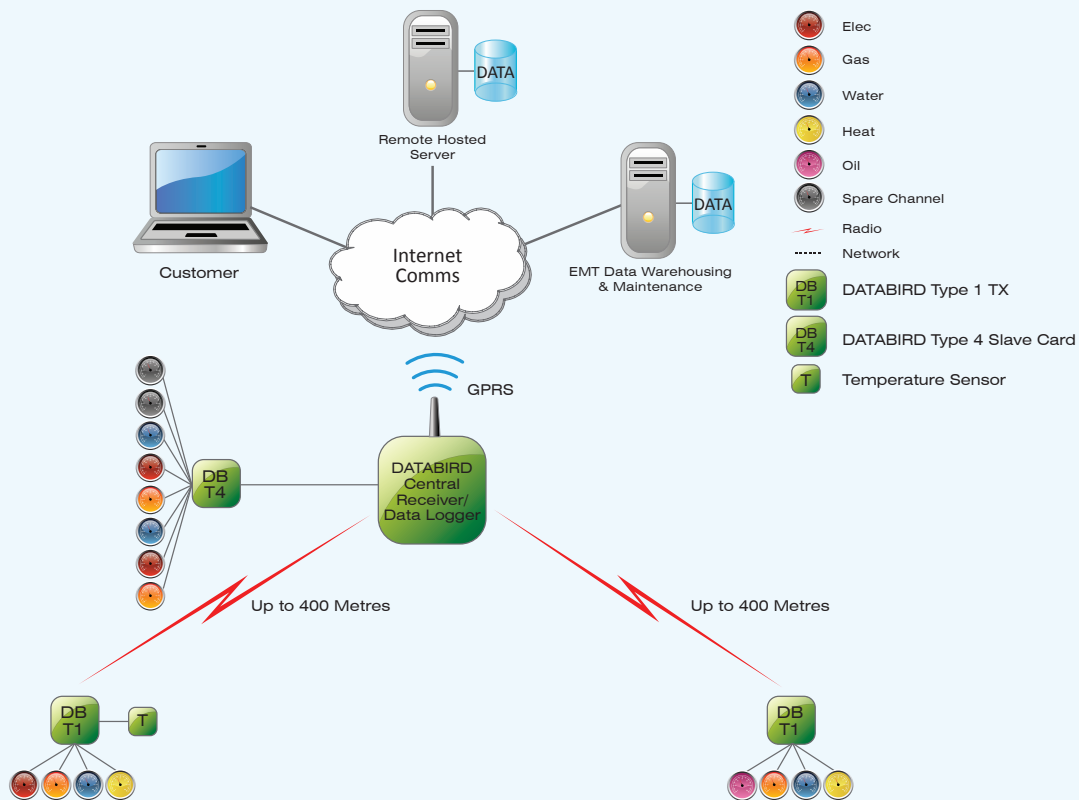
Two further analogue channels are available on each DATABIRD module to enable other "drivers" of utility consumption e.g. Production, humidity, borehole level etc, to be monitored.

Various Typical Configurations

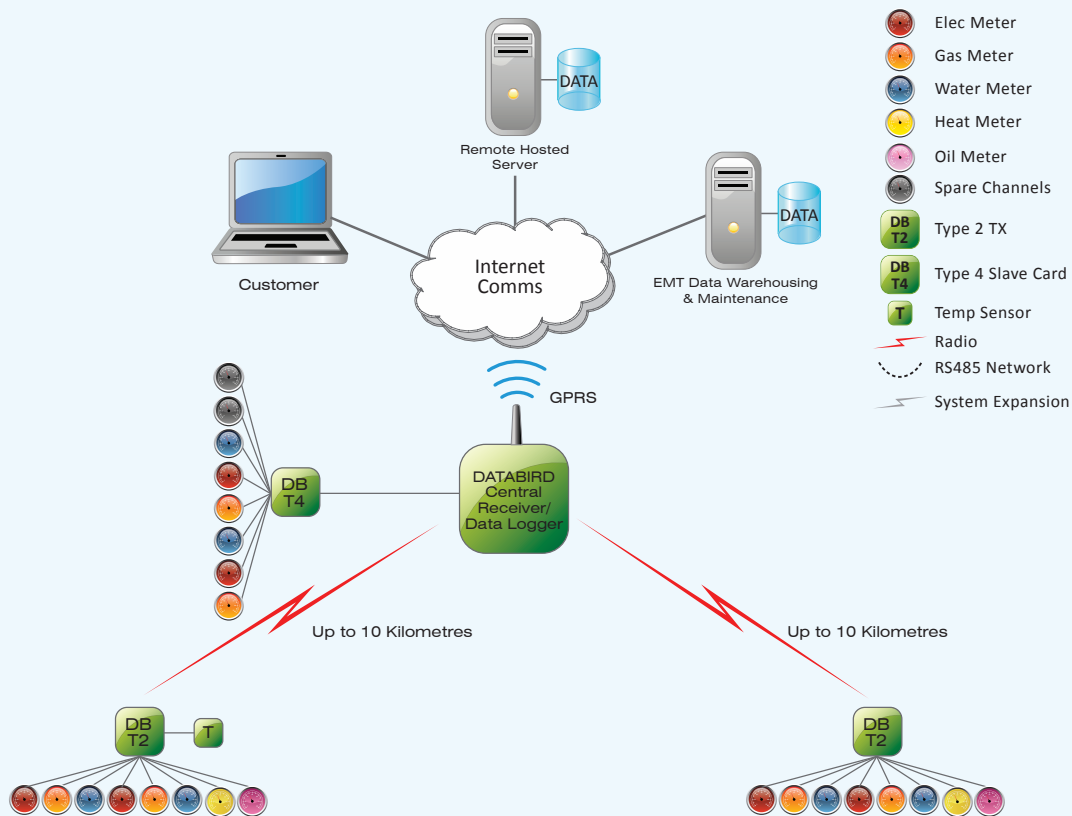
Basic DATABIRD option - Hardwired only meters e.g. Domestic, small retail outlets



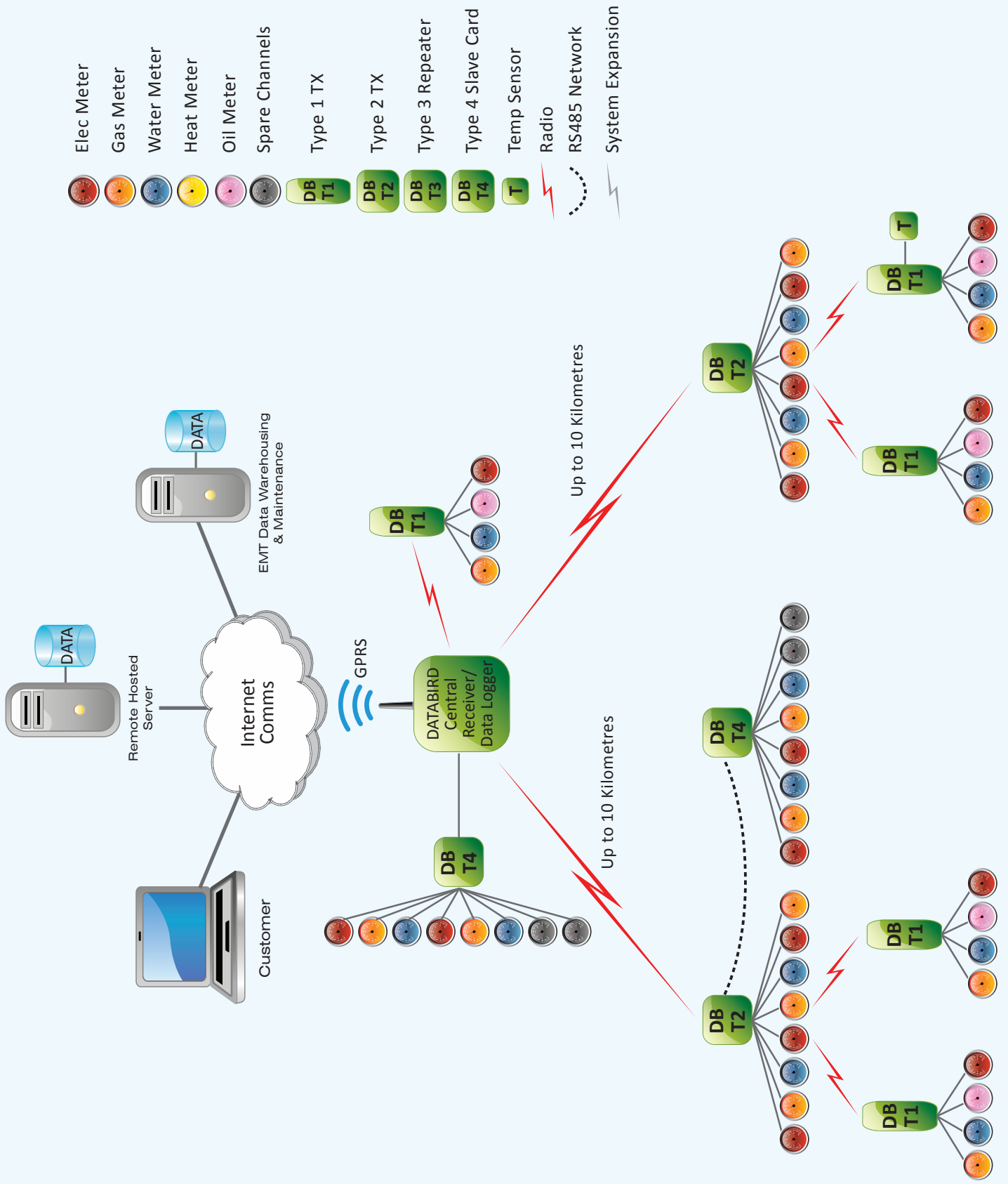
**Basic DATABIRD option – Short range, hardwire and radio
e.g. Standalone SME, school – single tier**



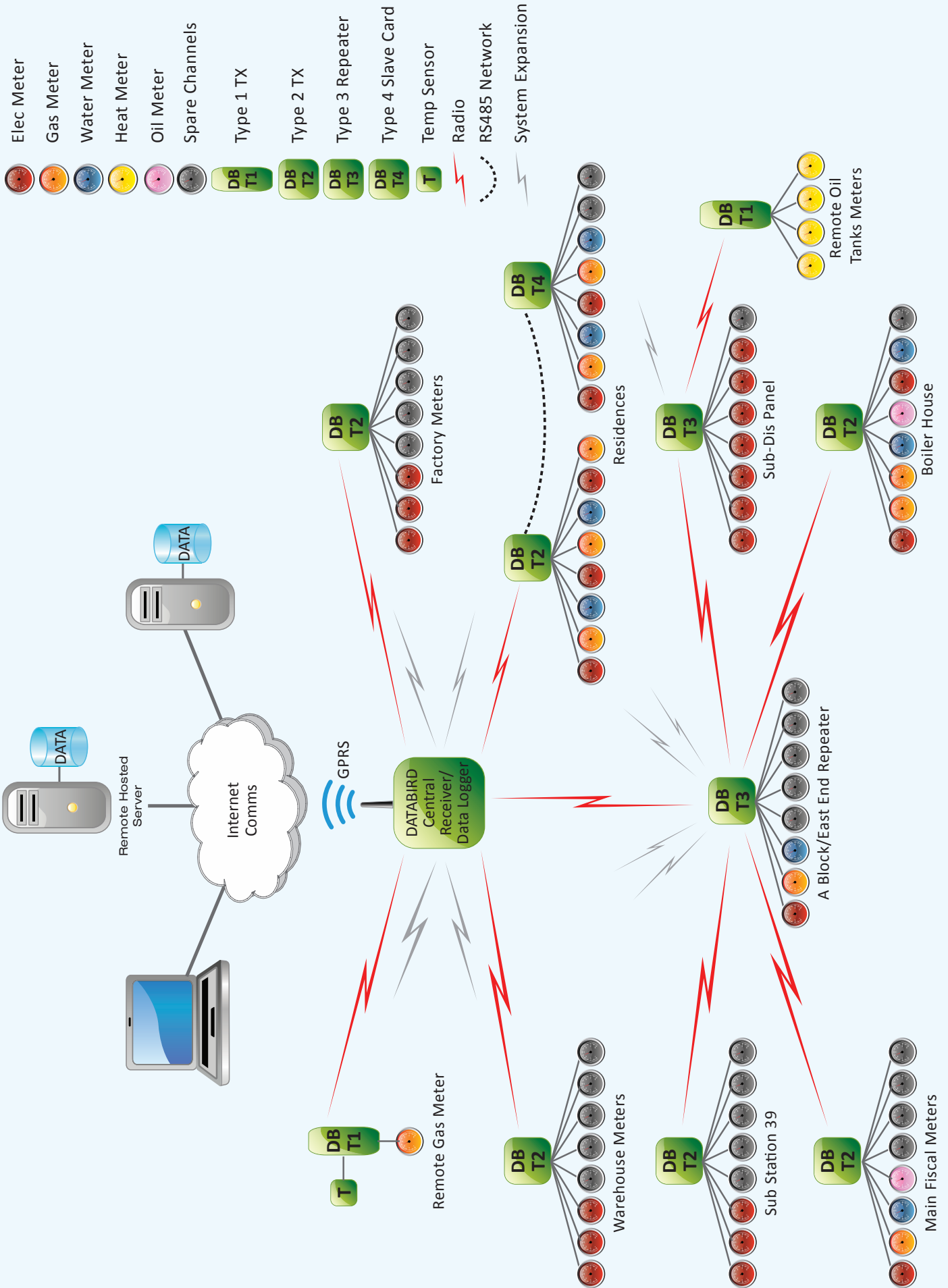
**Basic DATABIRD option – Long range, hardwire and radio
e.g. Sprawling industrial complex – single tier**



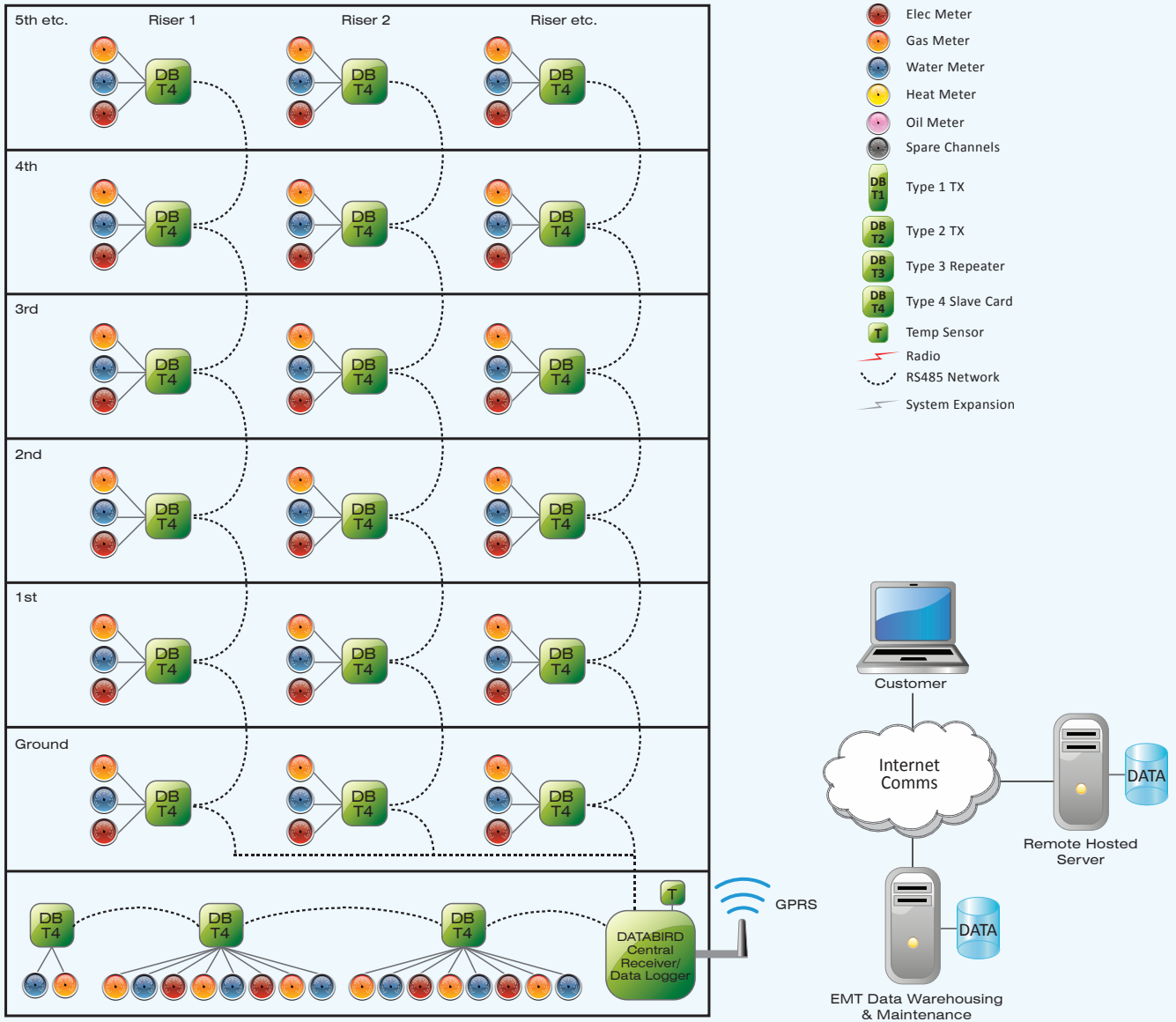
Two Tier DATABIRD option - Short and Long range DATABIRD transmitter deployment
 e.g. Campus type premises, universities, hospitals, MOD sites, docks, large industrial complexes



Multi Tier DATABIRD option – Multi tiers of modules allowing a comprehensive radio communication umbrella to be formed – e.g. Very large conurbations over cities and towns, counties and beyond.



Basic Hardwired, DATACARD Option - RS485 networked, slave cards
e.g. Office and residential blocks.



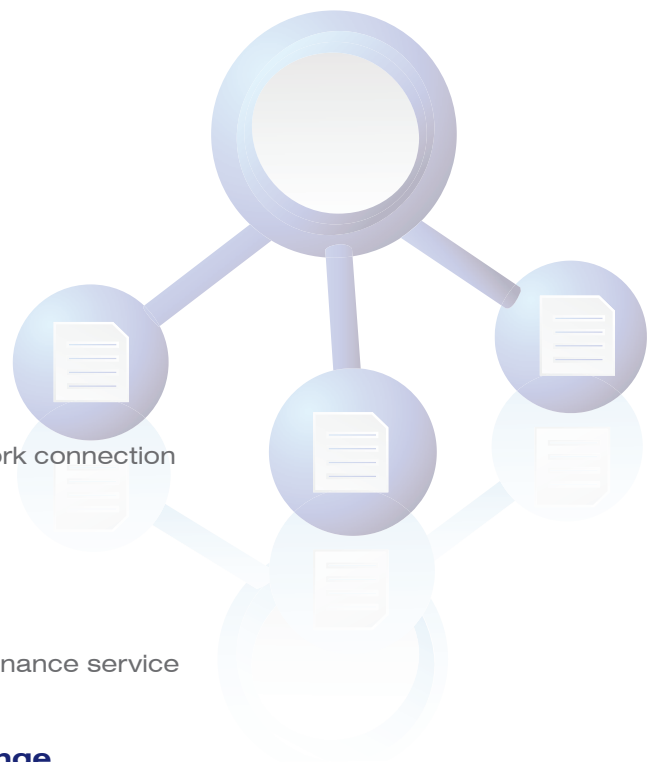
DATABIRD Summary of Features and Benefits:

- Ultimate tool for Utilities Management
- Gets to meters other systems can't reach
- Tried and tested over 15 years
- Simple in its architecture and operation
- Multi utility capability due to use of pulse counting technology
- Flexible comms infrastructure
- Simple, wireless installation
- Use of 'licence free radio'
- Works in 'accumulated pulse counts' not 'consumption in time interval'
- Can often be interfaced to existing meters
- Several powering options including solar
- All modules have battery back-up for "brown out"/security
- Small, compact, vandal resistant
- Simple temperature/analogue sensor connection
- Analogue channels for other sensor monitoring
- Remote maintenance contracts
- Latest system, upward compatible
- Wider area comms options from simple GPRS to the Internet to direct PC connection

DATABIRD Specifications

DATABIRD System

- Hardwired or low power radio comms options
- Radio 868 MHz Pan-European frequencies
- No radio licence required in EU countries
- All comms and logging devices battery backed
- Battery status monitored on all devices
- Final Comms to PC/server direct connect, GPRS and network connection
- CSV data logging file format
- Central logger – 28 days minimum data storage
- Variable time interval increments
- Virtually infinite number of meters can be read
- RS 232 output
- Comprehensive annual data warehousing/hardware maintenance service



DATAHICK (Type1) Transmitter – Short transmit range

- Lithium battery only powered – 5 year minimum battery life
- 4 meter input standard
- 25 mW(mep)
- Air temperature input onboard/remote (option), Stephenson’s screen option.
- Small rugged, unobtrusive, vandal proof enclosure
- Integral or remote antenna
- Potted option for water meter pits
- Transmit range typically 400 metres distance

“The Ultimate Tool For Utilities Management”

DATABIRD (Type 2/3) Transmitter/Repeaters – Long transmit Range

- Mains or solar power (6 volts DC)
- Hardwired or radio comms
- Radio transmit power 500 mW(mep)
- Transmit range up to 10 kilometres
- 8 meter inputs modules standard
- Air temperature remote (option)
- 3 off flexible analogue monitoring channels per standard module

DATACARD (Type 4) Slave Cards

- Hardwired only DATA BIRD
- Extends the meter capacity of a DATABIRD transmitter
- RS485 twisted pair network
- Usually powered from mains backed battery at central point
- 8 meter inputs modules standard
- Air temperature remote (option)



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DYNAMAT

Automatic Utilities Monitoring & Targeting Software



DYNAMATplus interprets raw data into actionable management information, eliminating the chore of meter data analysis. An essential tool to provide visibility for utilities management and Carbon reduction.

DYNAMATplus

DYNAMAT is EMT's meter data collection and analysis software. It has been developed over many years with the overall objective to automate as many of the mundane meter data analysis as possible. Whilst DYNAMAT can be used on top of any "CSV based" AMR system, DYNAMAT includes special facilities which optimise EMT's own automatic meter reading system DATA BIRD.



Two versions are available:

- DYNAMATplus
- DYNAMATlite

DYNAMATplus is a very sophisticated, multi utility, modular program incorporating:

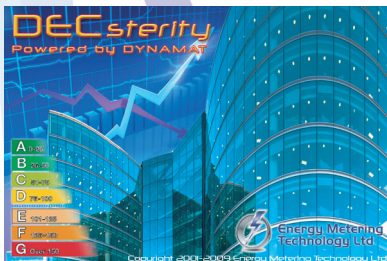
- "One stop shop" data base for all information pertaining to the meter point e.g. Account numbers, photos, notes etc.
- Importing of raw meter consumption data (e.g. Spreadsheets, EDI etc) and export of analysed data
- Dovetailing of manual "eye ball" meter readings with automatically collected data
- Many analyses of consumption, billing, bill verification and carbon/pollutant assessment including standard analyses (e.g. Regression, CUSUM, M&T etc) as well as EMT's own proprietary analysis (e.g. TRACKERTM, GUIDELINE, NIGHTLINE league table etc)
- Applicable days, calculation of local degree hours from DATA BIRD temperature sensing and handling of standard degree hours
- High definition graphics for easy understanding of analysed data.



DYNAMATlite

A new web based software for users requiring a less sophisticated, 'viewing window' into DYNAMATplus. It has been designed for users who only require a basic assessment of utility consumptions and costs. It is browser based and easy to use, incorporating the following simple features:

- Import of crude "half hour" data set, export of calculated data
- Graphics including consumption, carbon and utility costs profiling
- EMT's "self learning", TRACKERTM targeting



DYNAMATdecsterity

This is a new module of DYNAMATplus which, when in the hands of a qualified assessor can produce the required Display Energy Certificate (DEC). It is a "One-stop-shop" to collate, store and calculate all DEC relevant data and uses either manual input or automatically read meter data from, for example DATABIRD AMR, to produce the certificate. Hence it can be used as a DEC's data gathering tool with final certification by a DEC accredited assessor.

Bespoke Customer DYNAMAT Development

EMT originally launched DYNAMAT in 1991 and we continuously upgrade it to incorporate new legislative and customer requirements. As we write DYNAMAT ourselves we provide a cost effective, bespoke service for customer's special needs.

On-going Annual Support

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TRACKER™

DYNAMATplus has a unique TRACKER™ feature which learns the usual 'shape' of the profile and warns when it changes. Here we see it coming back into line after a period of excess consumption

Consumption

DYNAMATplus calculates consumption over any desired time increment. Its graphing features allow zooming in and the actual value at any point in time can be shown by pointing with the mouse.

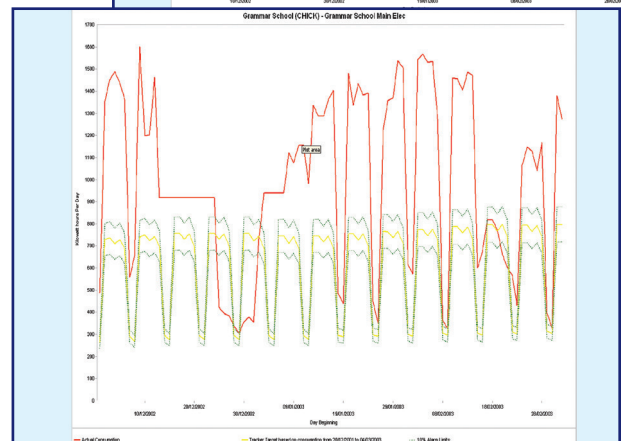
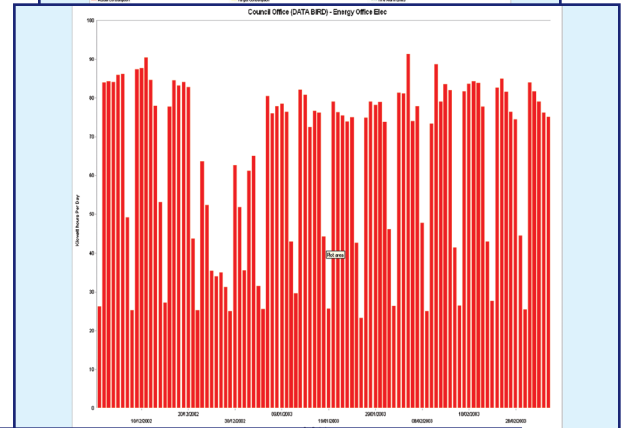
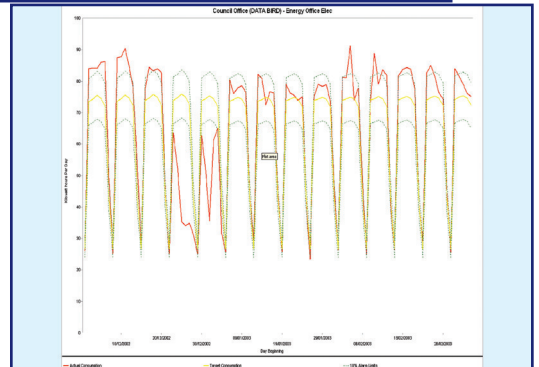
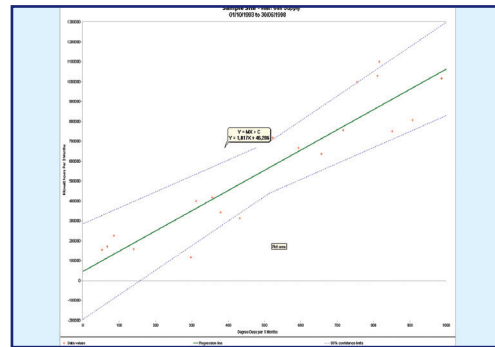
Bill Verification, Billing and CO2 Report

The finance module of DYNAMATplus can provide both bill checking and billing creation when sub billing is required. The finance module can cope with any common tariff structure and is updated when the Government moves the "goal posts" e.g. VAT, CCL etc. The output has been used many times to challenge Utility Companies should any discrepancies be found.

DYNAMATplus also displays a detailed environmental report to display information such as CO2, SOx and NOx emission consumption.

Regression

DYNAMATplus uses regression analysis to relate energy consumption to the weather, production or occupancy.



Targeting

Once a target is set, DYNAMATplus monitors the actual consumption against that target, and issues alarms when consumption goes outside preset limits.

DYNAMATplus Environmental Report

Date From: 01 January 2009 09:00:00
Date To: 18 January 2009 23:59:57
Site: [your site here]

Meter Name	Data Complete	Consumption	Units	CO2 Tonnes
Electricity Block				
[Customer name] - [your site here]	Y	16,020	kWh	6.89
Total Electricity Block:		16,020	kWh	6.89
Firm Gas				
[Customer name] - [your site here]	Y	18,221	kWh	3.46
Total Firm Gas:		18,221	kWh	3.46
Mains Water				
[Customer name] - [your site here]	Y	291	cu-m	0.00
Total Mains Water:		291	cu-m	0.00
Total:			kWh	10.35

DYNAMATplus Contract Cost Calculation - Main Meter

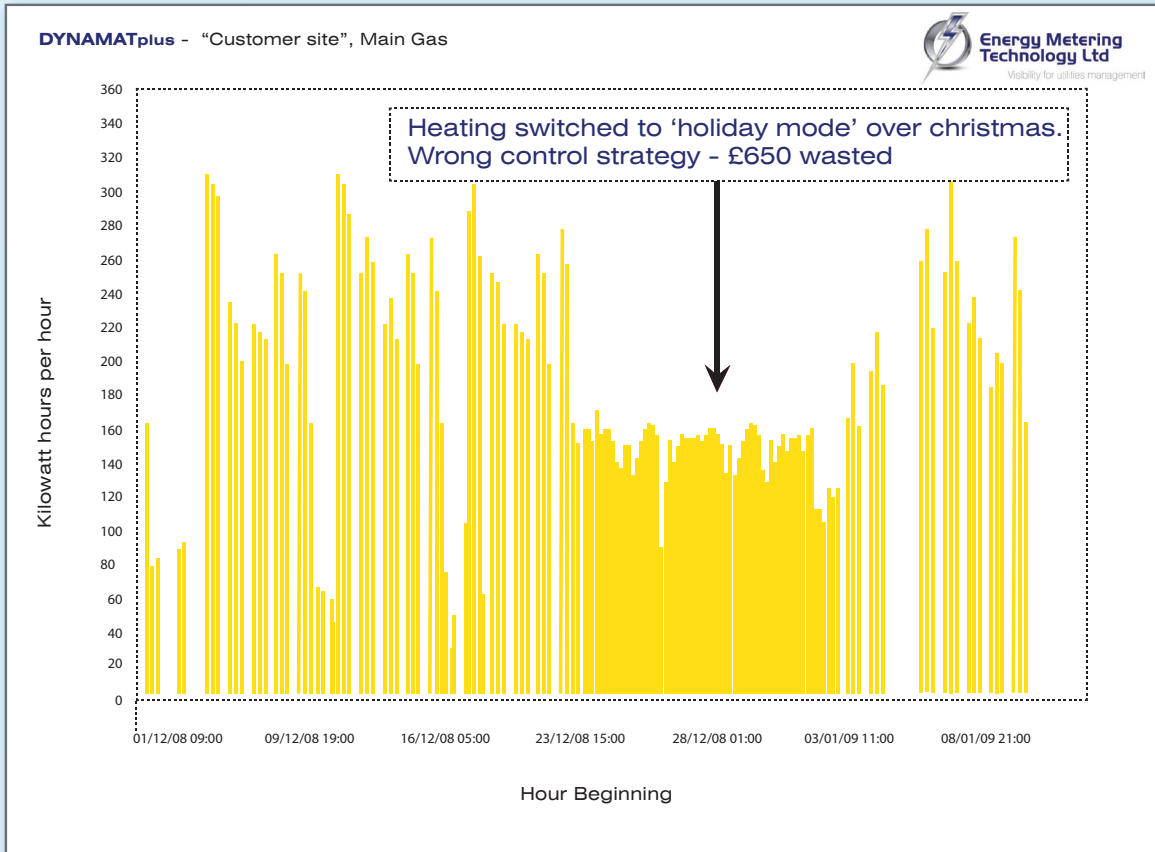
Date From: 01 January 2009 09:00:00
Date To: 18 January 2009 23:59:57

Meter: [your site here] Electricity kWh
Site: [your site here]
Services: Ex. Electricity Block

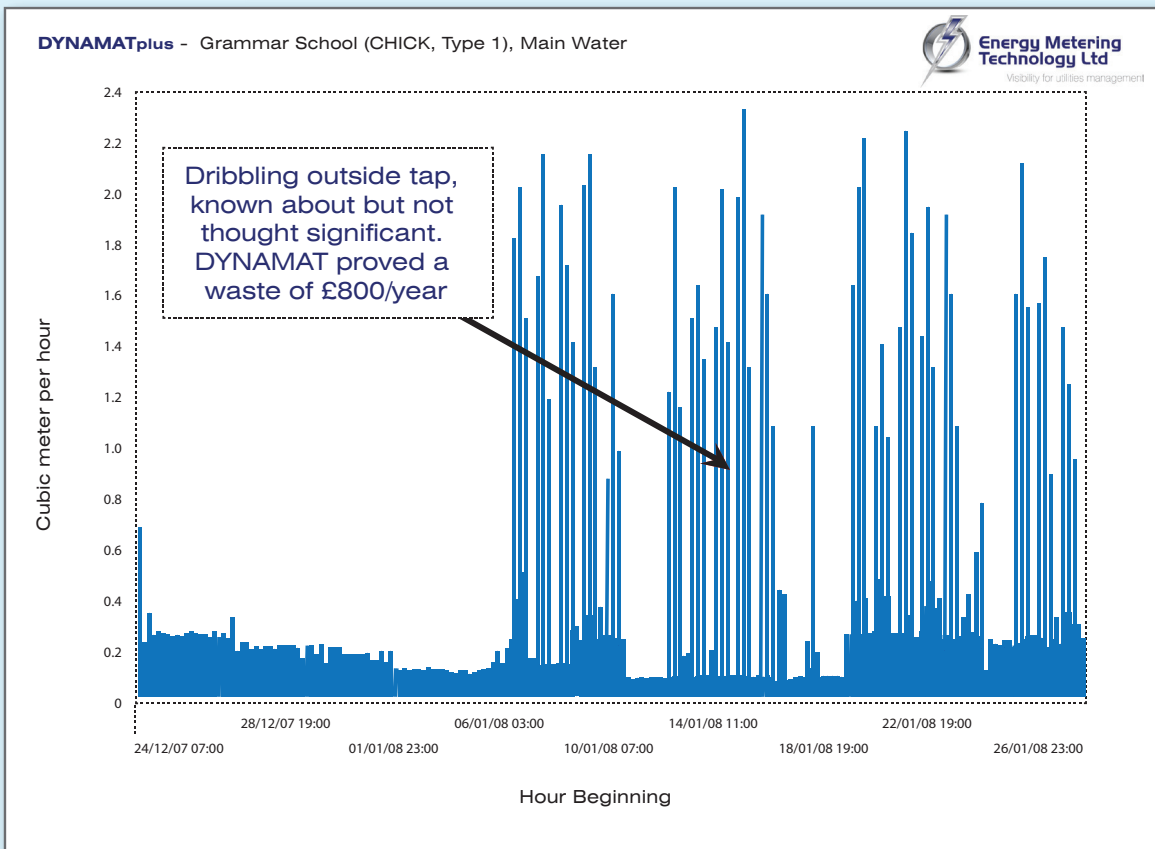
Charges for supply of Energy

Unit rate 1	14,128 kWh @ 6.00p	£ 847.71
Unit rate 2	1,891 kWh @ 6.00p	£ 113.47
Total units:	16,020 kWh	£ 961.18
Total Cost of Energy:		£ 961.18
Climate Change Levy		£ 68.88
Non-Domestic VAT @ 17.5% on 100%		£ 168.21
VAT on Climate Change Levy		£ 12.05
Total Payable:		£ 1,210.33

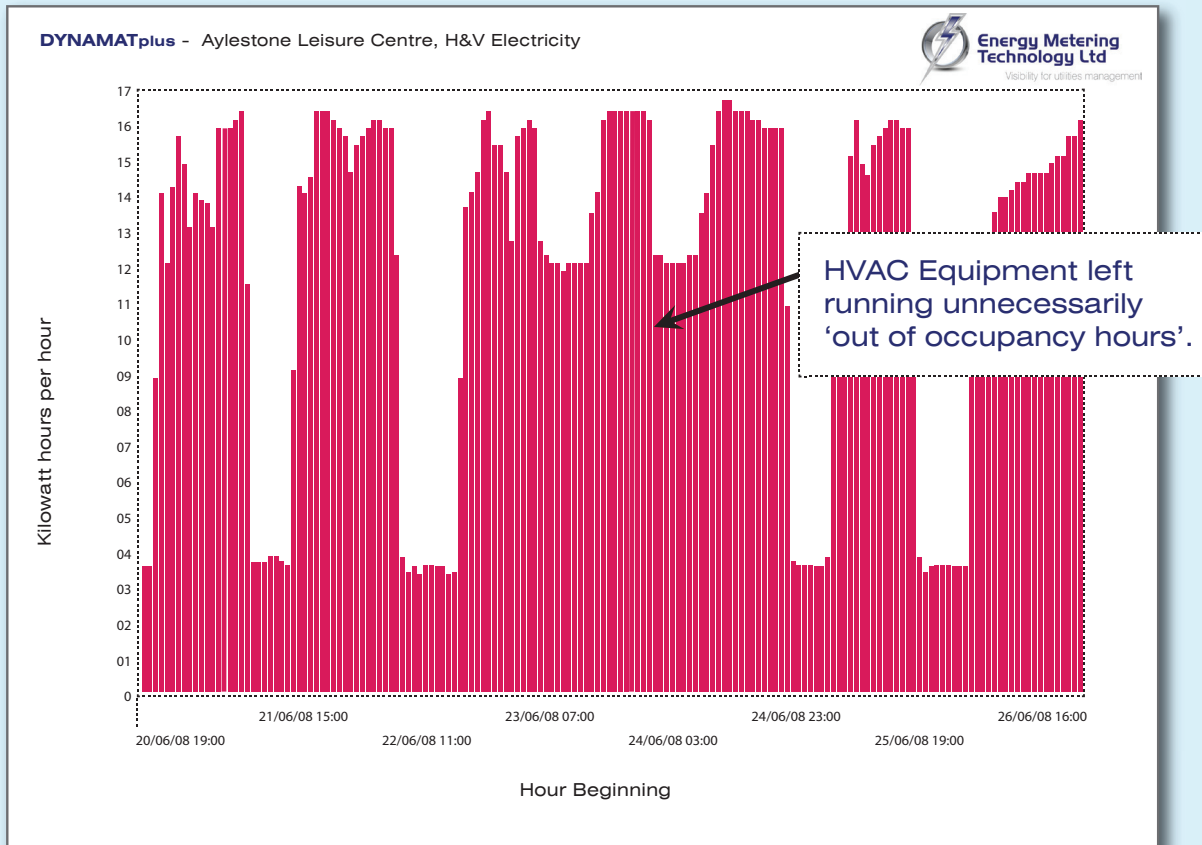
Some simple examples of basic profiling



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System Requirements

DYNAMATplus is a powerful system that is designed for the latest computer hardware. The falling cost of computer components ensures system with processing power that was unimaginable only a few years ago are easily obtained at commodity prices. EMT can supply suitable computers on request.

Minimum specifications for user system;

- 2GHz processor speed or better (3GHz or better for networked Servers)
- 1GB RAM and up to 2GB RAM for each processor
- XP Professional or Vista
- Internal Modem • CD-ROM Drive

CUSTOMERS

Councils

Leicester City
New Forest
Hinckley & Bosworth
Oxford

Universities

Bath Spa
De Montfort
Leeds Metropolitan
Leicester
Kent
Edinburgh
Teesside
Royal Holloway

MOD

Royal Air Force
Royal Navy

Private Companies

Weetabix
Campbells
McVities
Smith & Nephew
Bandvulc Tyres
ExCeL London
Eden Project
East Midlands Airport

Health

Belfast BHSC
North Lincolnshire & Goole NHS Trust
United Lincolnshire NHS Trust

AWARDS

1995

Detr Brecsu
Best
Practice
R&D

2002

DTI
"Smart"
Award for
Innovation

2002

Don Lack
Energy
Manager of
the year

2005

Carbon
Trust
Development
Award

2005/06

Beacon
Award
Sustainable
Energy

Energy Metering Technology Ltd

Lloyd House, 57 High Street, Burnham, Slough SL1 7JX Telephone. 01628 664056 Facsimile. 01628 668978
www.energymeteringtechnology.com

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