Halma Water Management

DMA Management

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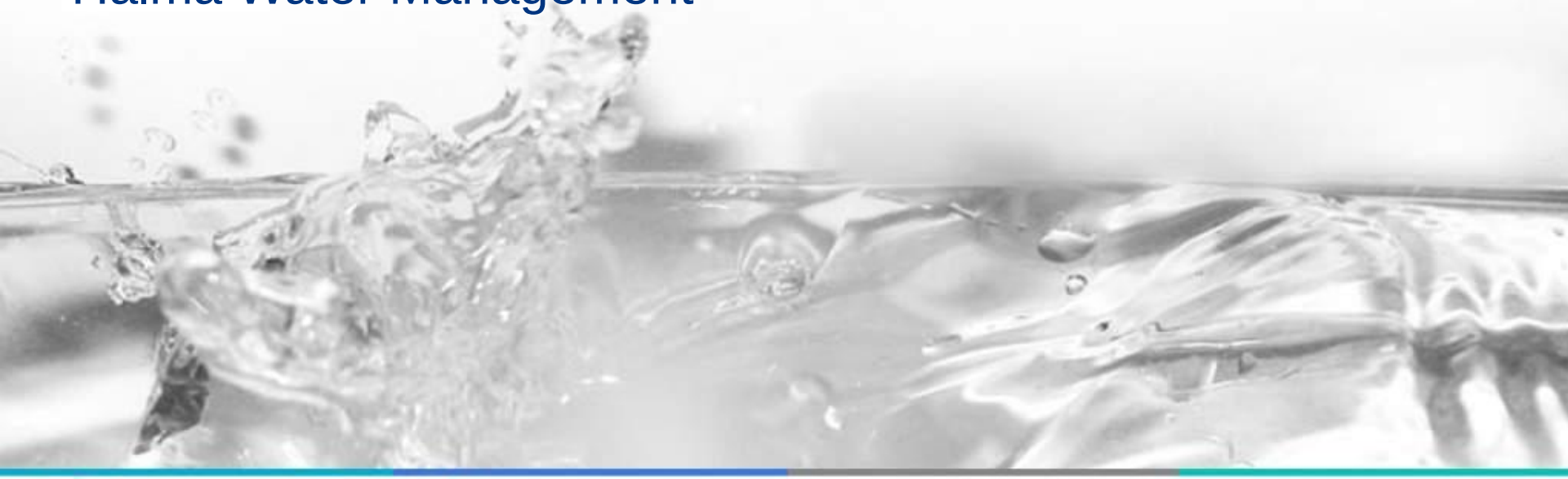

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Before We Start …

- Mobile Phones Please Turn Off !
- Special requirements for lunch
- Smoking
- Toilets
- Coffee Breaks
- Fire procedures
- Health and Safety while on site

Tell Us About Yourself

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- Where do you work?
- What is your job?
- How long have you been doing it?
- What have you done in the past?
- What would you like to get out of this course?
- What are your Hobbies/Interests?

Agenda

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- WHAT IS LEAKAGE ?
- WHAT IS A DMA ?
- DMA FLOW LOGGING
- DMA PRESSURE LOGGING
- DATA LOGGING RANGE
- RECORDING SENSORS
- DATA COLLECTION
- SOFTWARE
- HANDS ON PRACTICAL
- DOWNLOADING VIA PSION
- QUESTIONS

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WHAT IS LEAKAGE ?

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What Is Leakage ?

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Leakage is often called “Unaccounted For Water”

Water which is lost on the pipe network through leaks + water which is not accounted for via assumptions and calculated figures.

UFW = S - (M + A x P)

S - Sum of all inputs into the system
M - Sum of all metered supplies both domestic and non domestic
A - Average domestic per capita of population
P - Population supplied

Total Integrated Flow

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Using the UFW calculation, water companies use this a the “top down approach” to report their leakage levels to OFWAT.

This method is called the “Total Integrated Flow”

Minimum Night Flow

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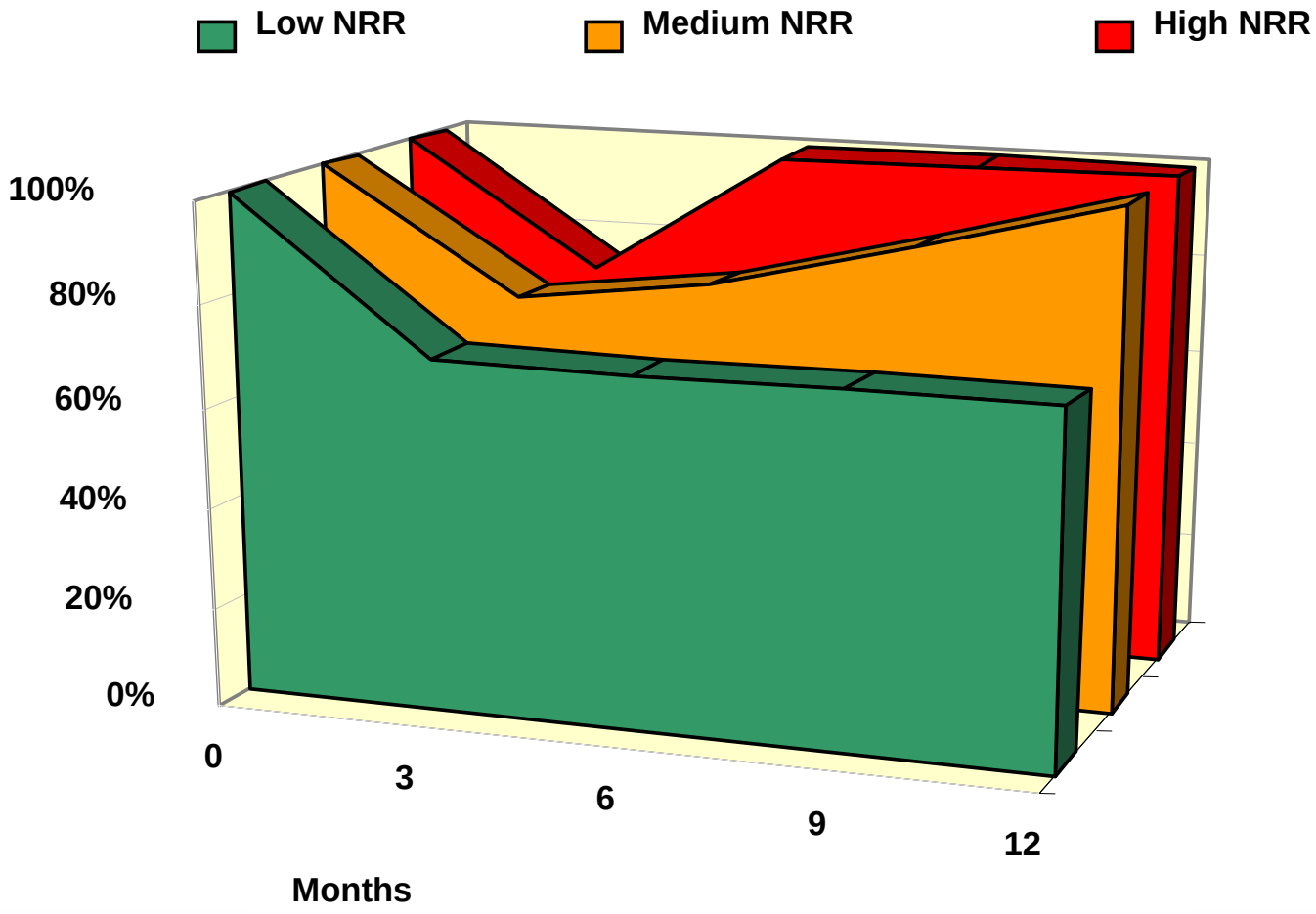
Some companies establish DMA's (District Metered Areas) Taking minimum recorded flows in the early hours of the morning, they take away allowances for legitimate use and what's left is classed as leakage. This is the "bottom up" approach.

This method is called the "Minimum Night Flow"

Natural Rate Of Rise



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WHAT IS A DMA ?

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What Is A DMA ?

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A District Metered Area is the basic building block of the distribution system.

- 1000 to 5000 (average) property size)
- Usually permanently monitored
- Performance indicator
- System control
- Future asset spending

Distribution Network

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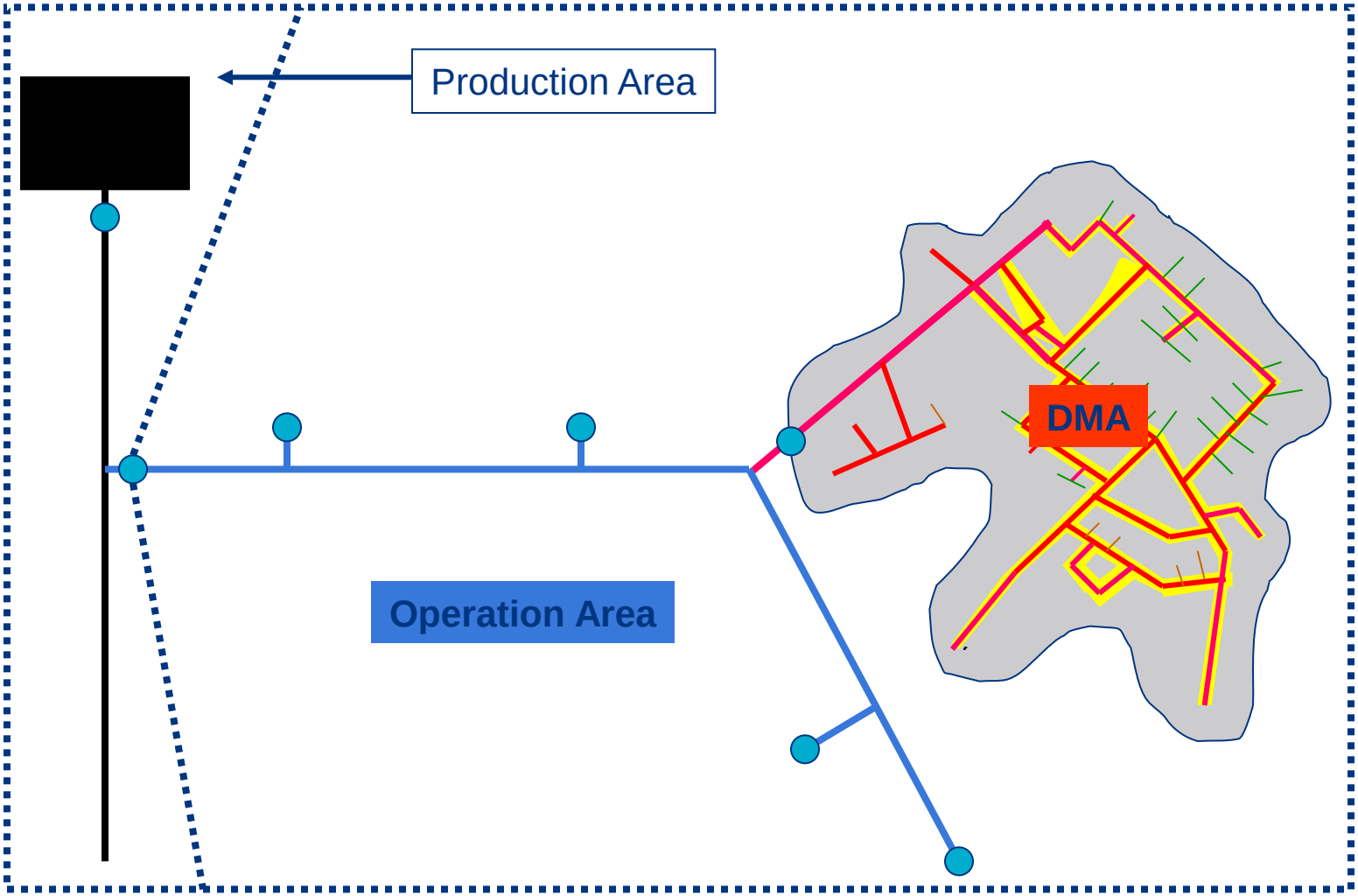

Benefits of a DMA

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1 - Leakage Control

2 - Pressure Management & Levels of Service

3 - Asset Maintenance & Renewal

4 - Monitoring & Maintenance of Water Quality

5 - Planning & Programming of Repair Maintenance

Type Of Leakage Control Work

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- Proactive Manual Sounding
- Acoustic Noise Logging
- Correlators
- Step Testing
- Ground Microphone
- Pressure Controllers

- Mains Renewal
- Service Repairs

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DMA FLOW LOGGING

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DMA Data Logging

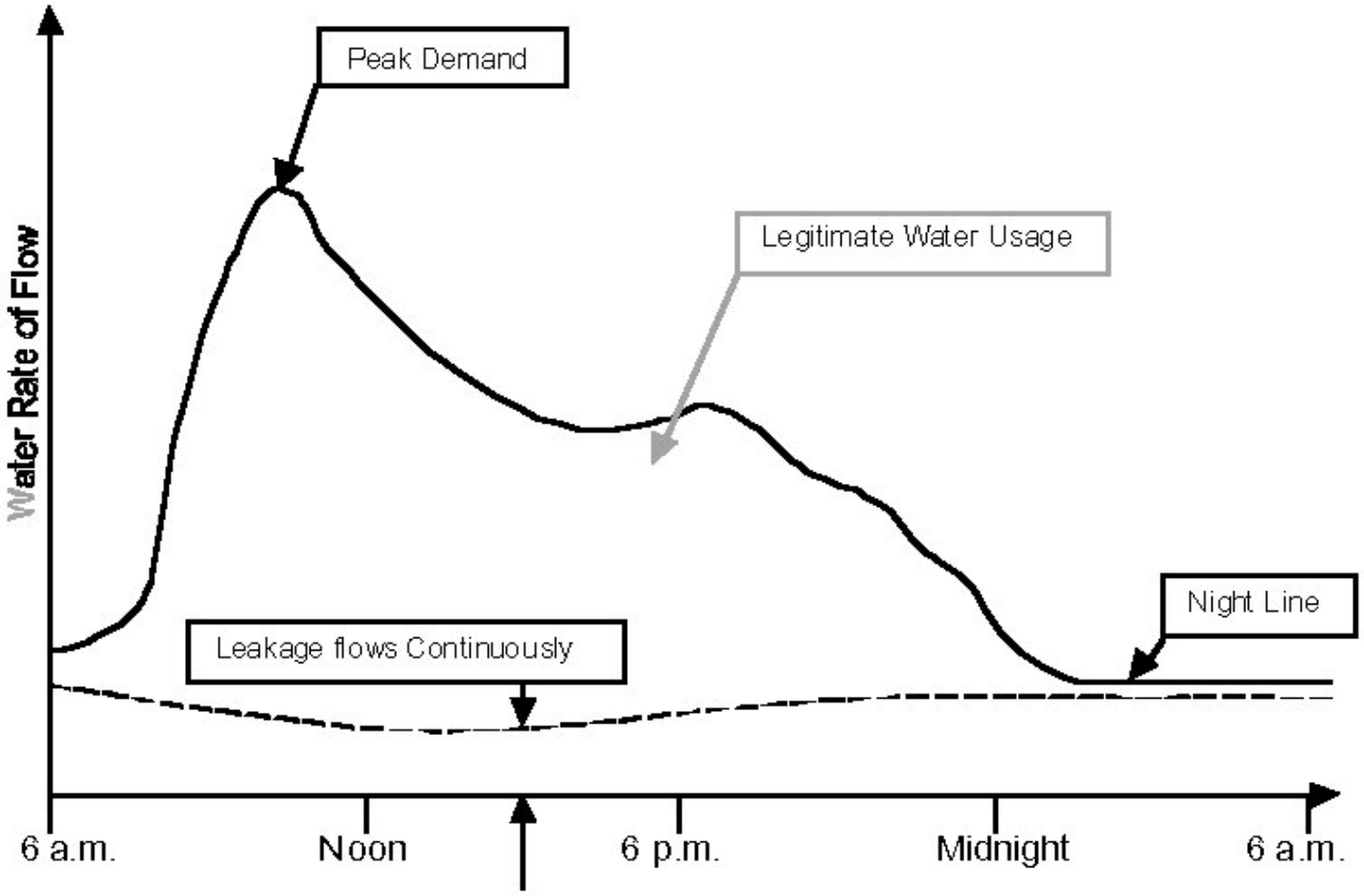
Most DMA meters are permanently logged via a data logger.

The data logger stores flow data recorded by the DMA meter via a pulse unit.

As a meter turns it creates a magnetic pulse picked up by the pulse unit. Usually one full meter revolution = an amount of liters (meter register usually displays this in factors of 10)

The logger can then calculate the flow recorded and store the information

Typical Daily Flow Profile



Flow Data

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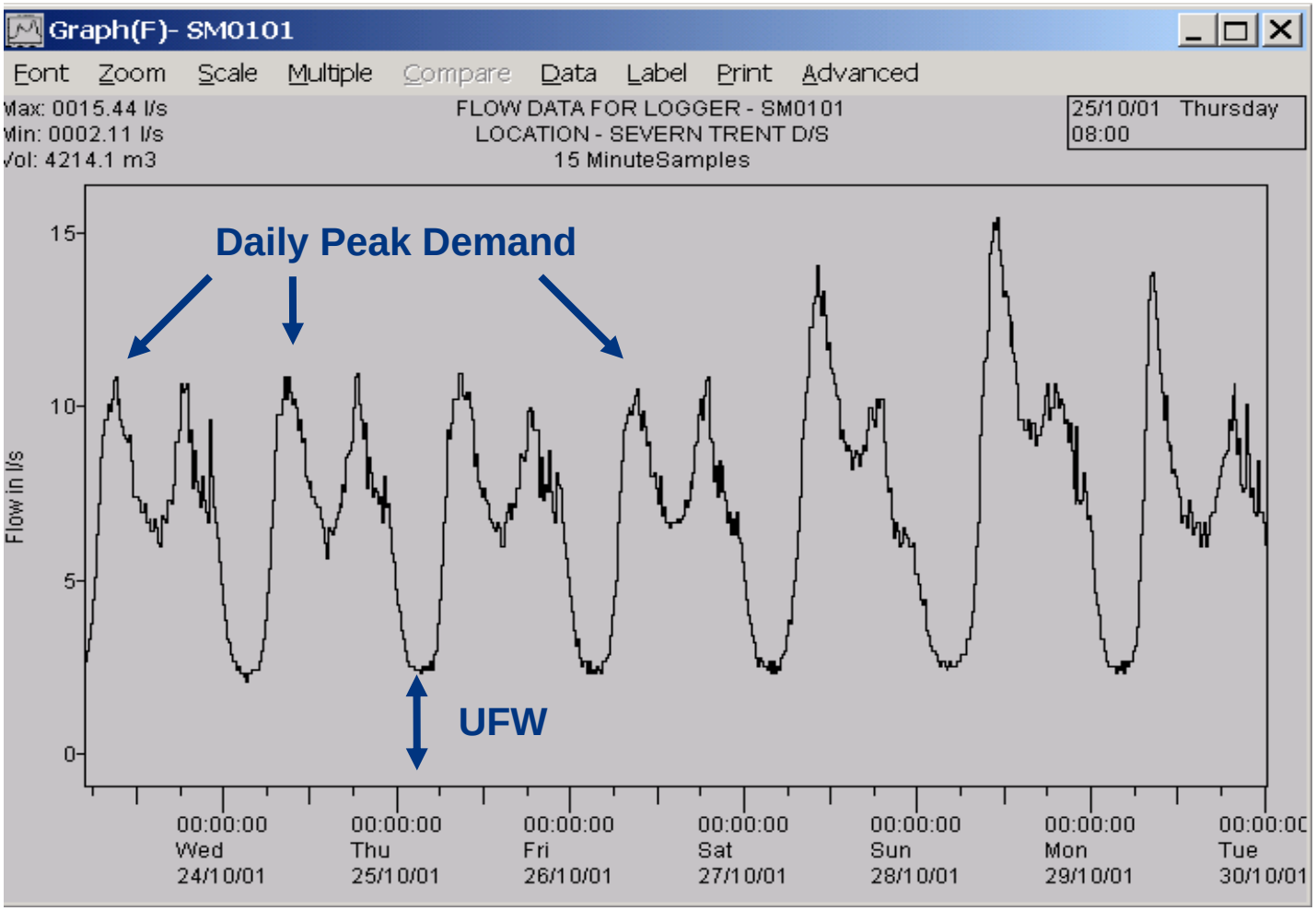

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DMA PRESSURE LOGGING

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Why Pressure Log ?

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Pressure logging the system can highlight potential network problems
and eliminate areas where no problems exist.

The DG make all water companies log at least one pressure point in every DMA.
This is called the “Critical Point” (DG2).
This is used to measure interruptions to supply and standard levels of service.

Critical Point Pressure

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The critical point pressure is usually the highest point within a DMA.

But it could also be :-

- Where a PRV has reduced pressure
- Internal condition of the pipe is poor
- Other operational reason

The critical point is where a DG2 Logger will be fitted

Critical Point Pressure

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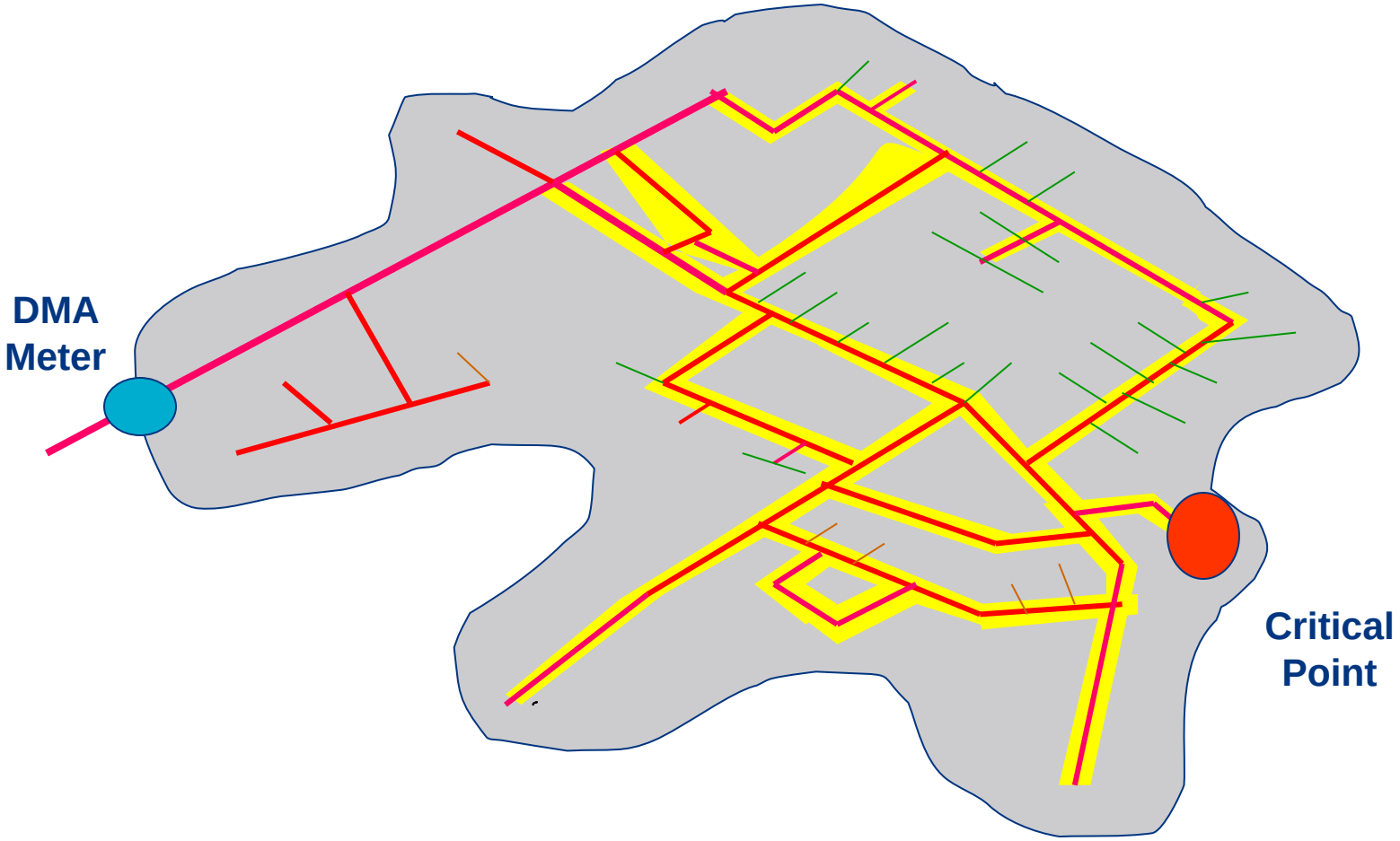

Flow & Pressure Relationship

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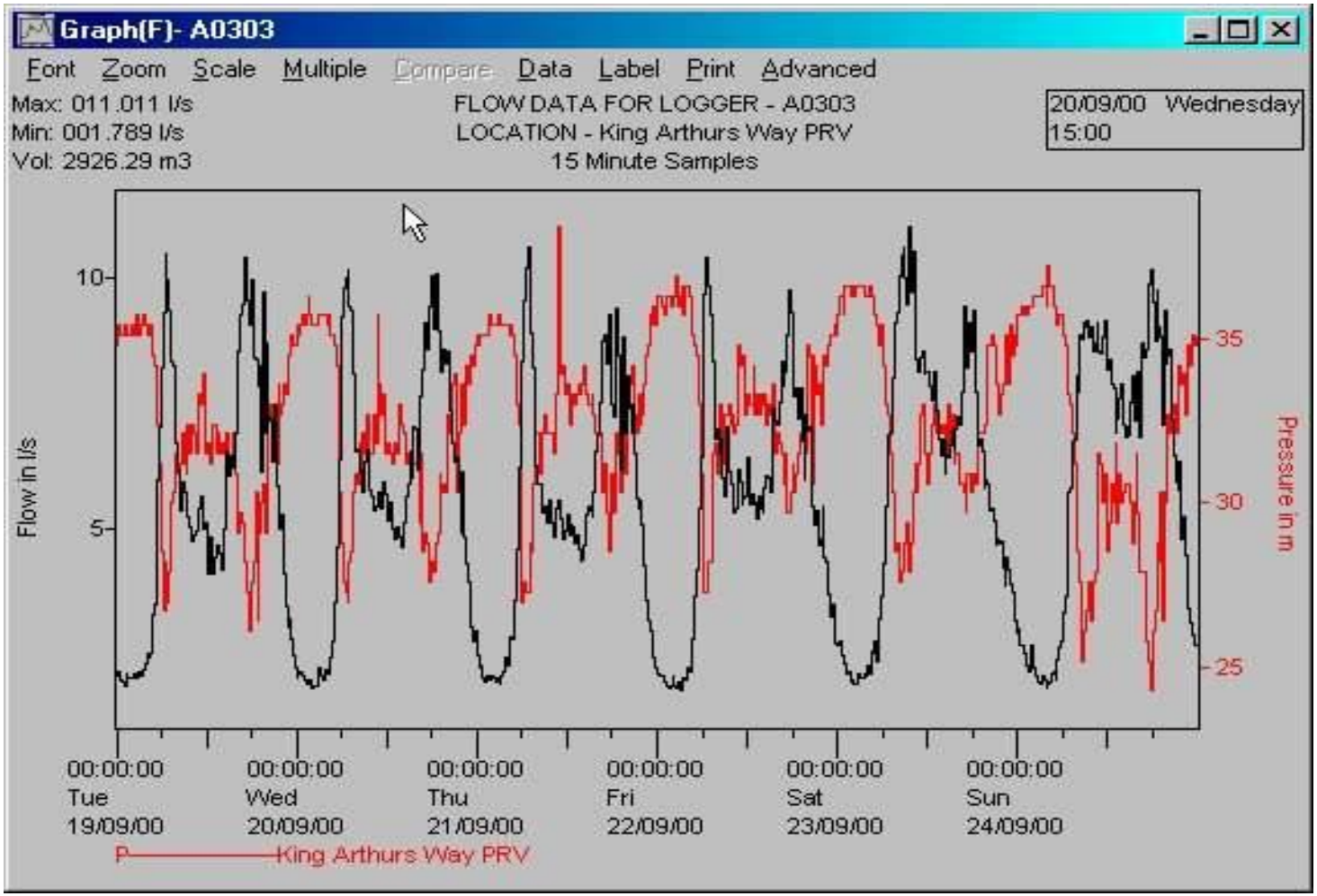

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DATA LOGGING RANGE

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Portable Data Loggers

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LOLOG

Single channel flow or pressure

Portable Data Loggers

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LOLOG LL

Dual input logger flow and pressure

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LOLOG LL - Vista

Dual input logger flow and pressure
Digital display

Portable Data Loggers

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LOLOG - Depth Logger

Portable Data Loggers

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MULTILOG

1 to 4 input channels
- **Digital Flow input**
- **External Pressure input**
- **Analogue 4-20mA input**
- **Internal Pressure sensor**

MultiLog has :-
Secondary channel for fast logging up to 1 second sample interval

Remote Data Loggers

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Telemetry logger options - Multilog

with integral modems

PSTN

GSM

SMS

SMS Principle

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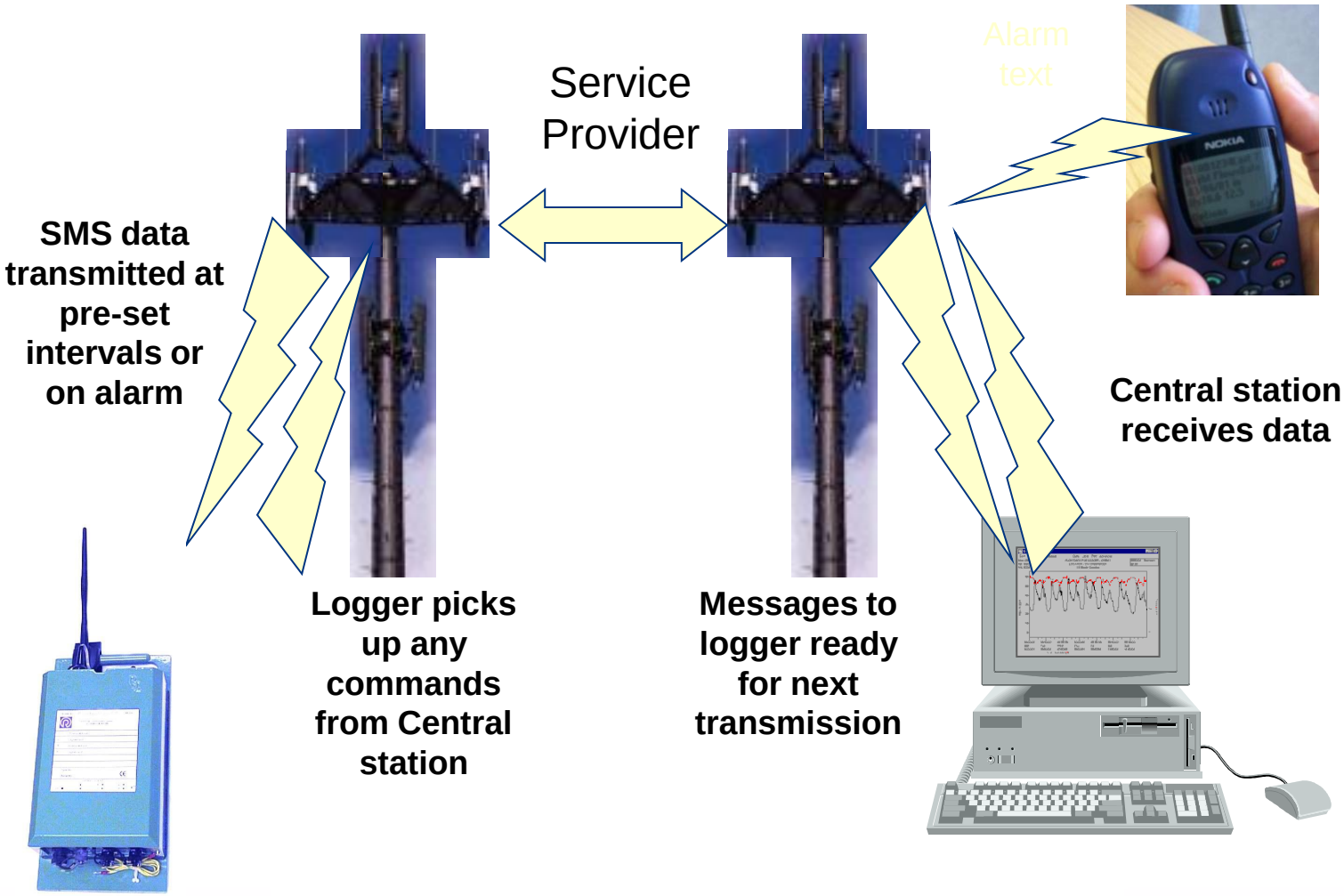

GSM Principle

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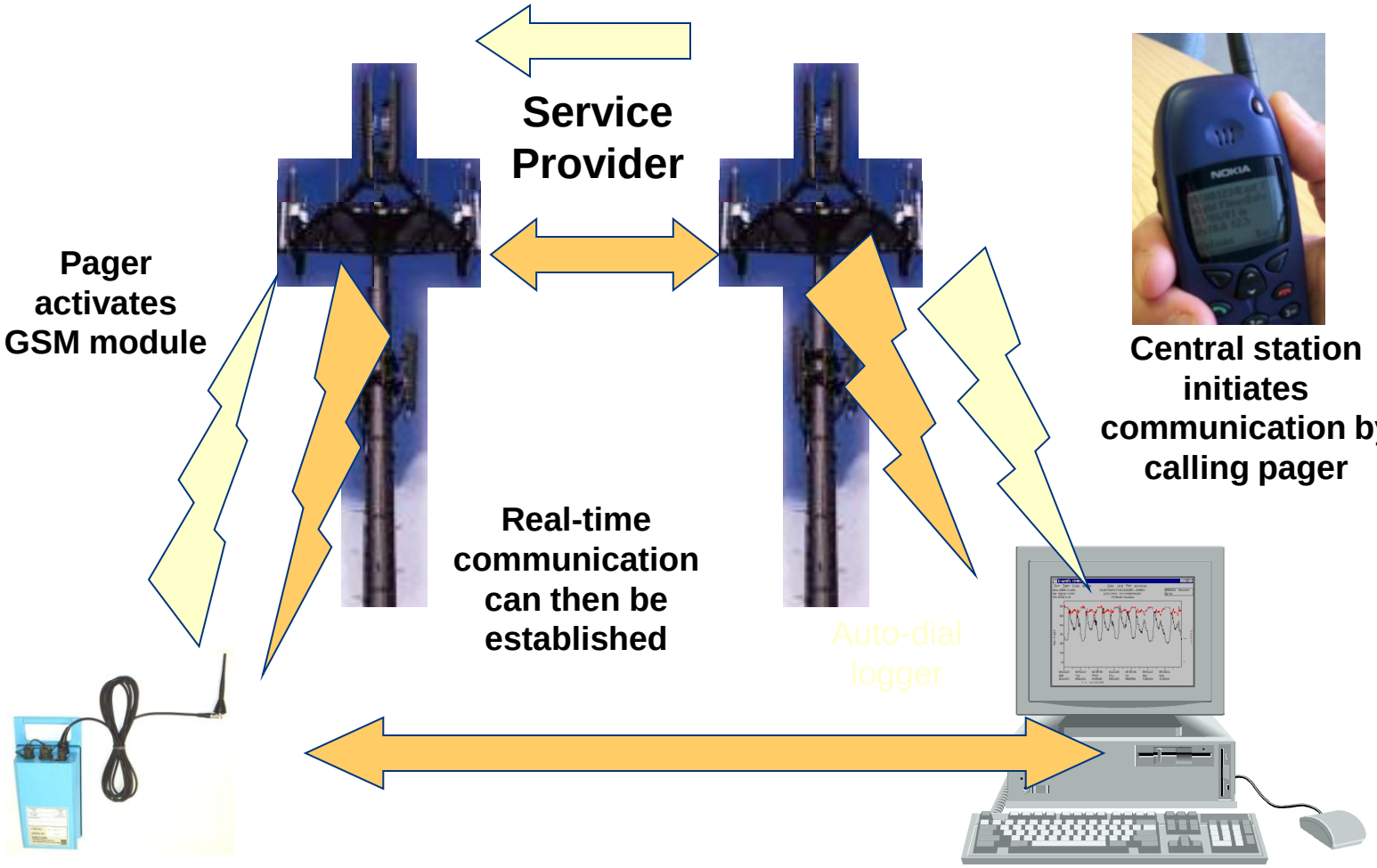

Remote Data Loggers

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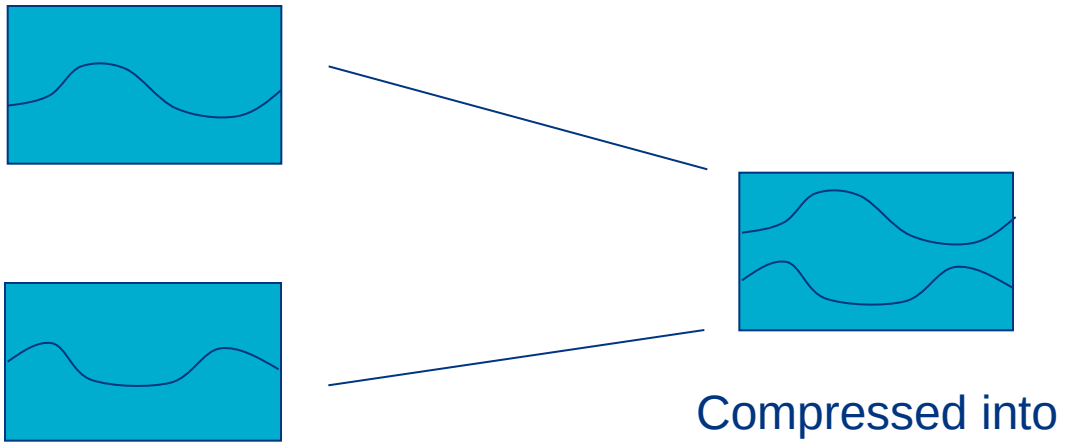
SMS compression



2x Channels
of Data

Compressed into
1x SMS message

15 minute Sample Rate

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DATA COLLECTION

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Data Collection

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RadLink

Data Collection

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PALM TOP

Any Questions ?

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