DISTRIBUTED MEASUREMENT WITH OXYGEN-NET

UNLIMITED CHANNEL EXPANSION

DEWETRON

THE MEASURABLE DIFFERENCE.

- **> Systems with almost unlimited channels**
- **> Prepare-And-Claim-Technology (PAC) for fast and efficient set up**
- **> Redundant storing**
- **> Auto SYNC-SETUP**
- **> Various SYNC possibilities PTP, IRIG, GPS**
- **> Remote Control (ie: from a wind tunnel)**
- **> DATA-Source via TCP/IP streams for 3rd party application**

FURTHER INFORMATION?

Visit us on www.dewetron.com

Does your channel count exceed the maximum possible number of channels per instrument?
Are your channels distributed over a long distance?
OXYGEN-NET will help you to meet this challenges.

THE CHALLENGE

The OXYGEN data acquisition software, included in every DEWETRON instrument, can process hundreds of channels. Analogue, Digital, Counter, CAN and Inertial data are only a few examples.

Depending on the instrument, systems with up to 144 analogue input channels can be realized. But some applications like wind tunnel tests, durability tests, and vibration tests require a much higher channel count. For these particular applications the channel count is between 200 and 1000 channels!

Figure 1: Networked instruments for a high channel count system

To achieve a high channel count, there are two possibilities. Create a single instrument with high channel count, or network instruments.

The second possibility has several advantages and is realized with the OXYGEN-NET extension.

DEWETRONs SOLUTION

The OXYGEN-NET extension offers the option of networking several DEWETRON instruments into a single system!
The instruments are merged via LAN interface, and synchronized with TRION-SYNC-BUS, GPS-, IRIG- or PTP Sync. At distributed channels over long distances or when cable sync is not possible, PTP, IRIG- or GPS sync. guarantees absolutely synchronous measurements.

UNIQUE PAC-TECHNOLOGY WILL HELP WITH SET UP

Prepare **A**nd **C**laim Technology helps to speed up instrument configuration. PAC can be used during the set up of the channels, so every instrument is used “stand alone” during the set up and configuration process. Compared to other systems, where one instrument holds all the channels, with this technology every instrument can be prepared individually. Engineers can share instruments and channels during set up. In the end all instruments are CLAIMED to a single system and operated from the “MAIN” instrument! CLAIM first and set up all channels from “MAIN” instrument is possible as well.

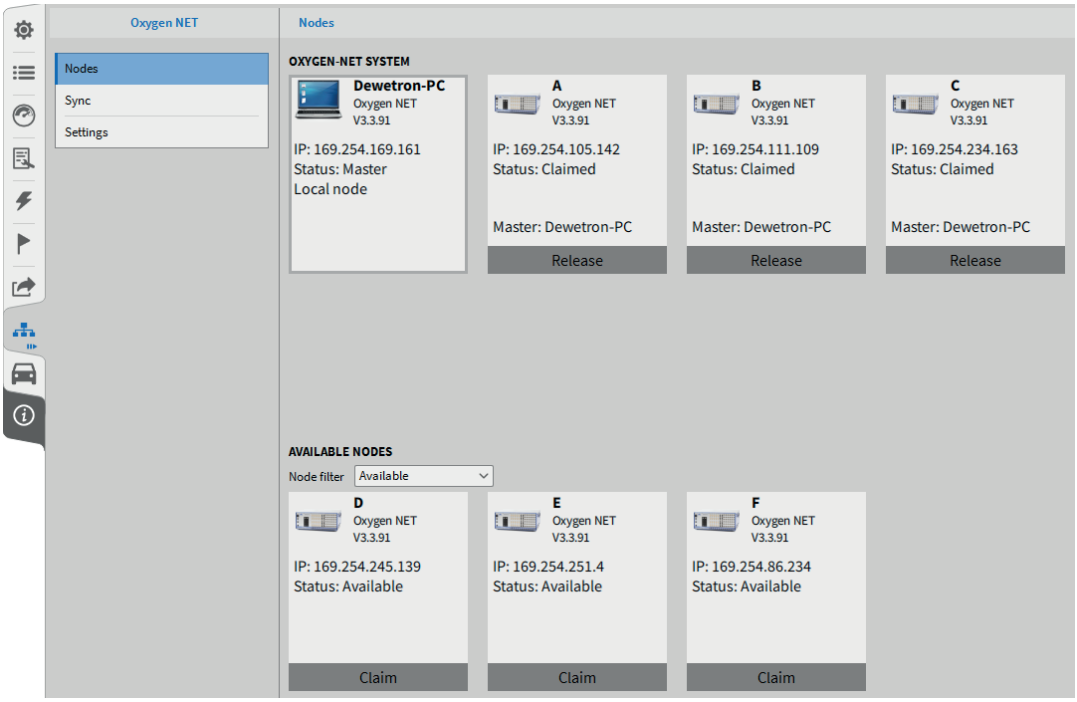

Figure 2: OXYGEN-NET extension with claimed and available instruments

FAST AND EFFICIENT CONFIGURATION FOR HIGH CHANNEL COUNT

One way to set up measurement channels in OXYGEN is from the table or list view.

Smart filtering techniques allow the user to find channels quickly.

Smart filtering on various columns will help to find channels or groups of channels.

Filters can be applied on channel names, group of names, measurement modes, or even on expansion instruments.

In addition, sorting can be used on the result, to automatically apply at several math functions to channels.
For example, the auto application of strain channels to the Rosette mathematic (Figure 3).

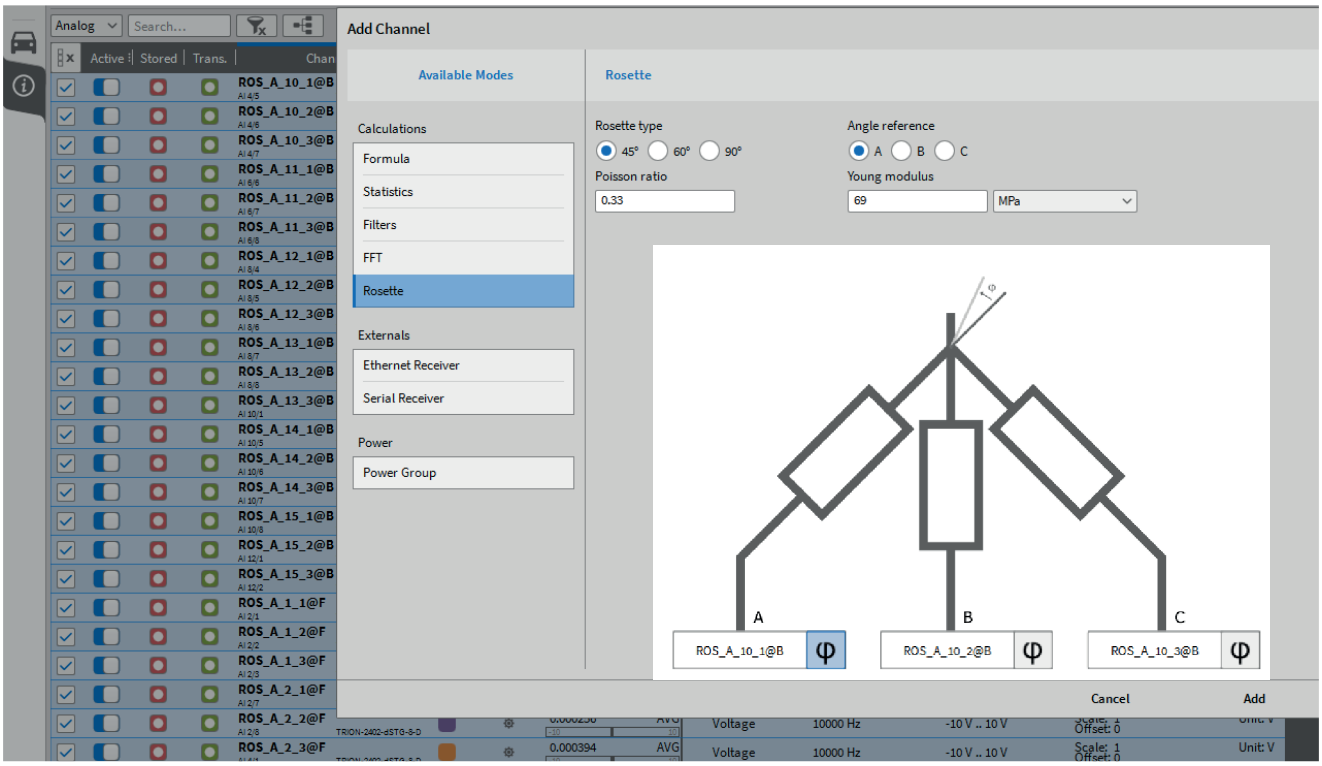

Figure 3

Channel settings like Measure mode, Scaling, Filter, and Sampling rate can be applied to a group of channels.
Copy and Paste was never that simple! (Figure 4)

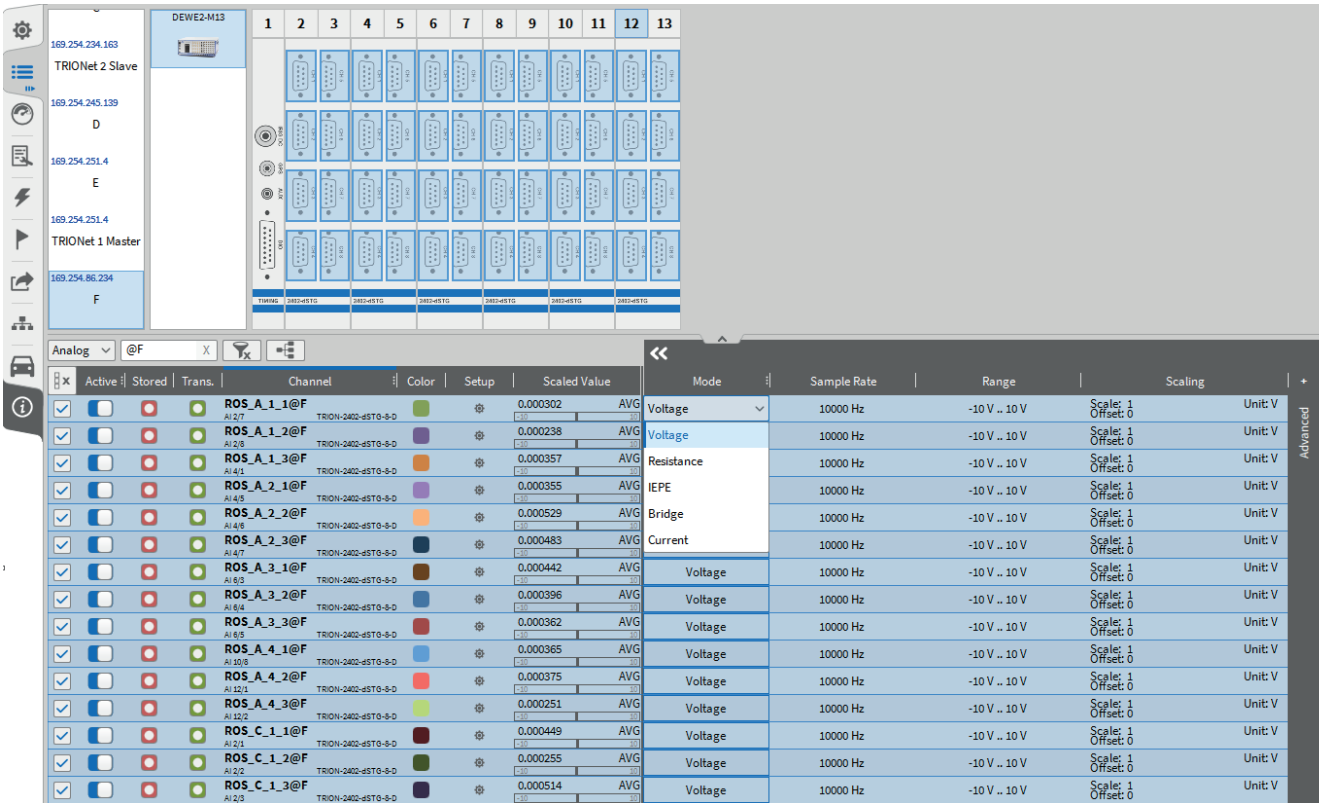

Figure 4

Setting up channel scaling on a group of channels is a further example how easy it is to configure a high channel count system! (Figure 5)

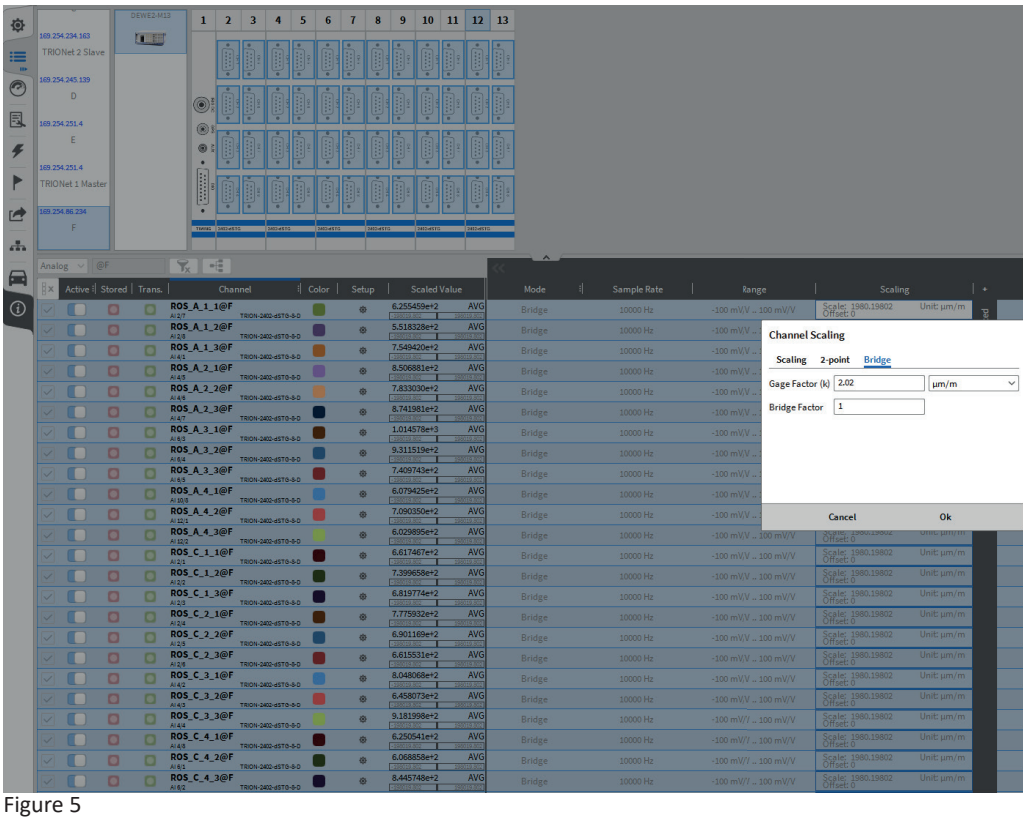

Figure 5

STORING, REDUNDANCY AND DATA RATES AT HIGH SAMPLING RATES MUST BE CONSIDERED!

A high channel count will also create a big amount of data. With some configurations, where high sampling rates are involved, it is not possible to store all channels with one instrument. Another demand is to store data redundantly, for maximum security.

OXYGEN-NET can ddresses both considerations. Data can be stored on the MAIN instrument, and also on the EXPANSION instruments. This guaranties maximum security, and also almost unlimited data rates. It might be that not all channels are required on the MAIN unit, also this can be configured individually for each channel.

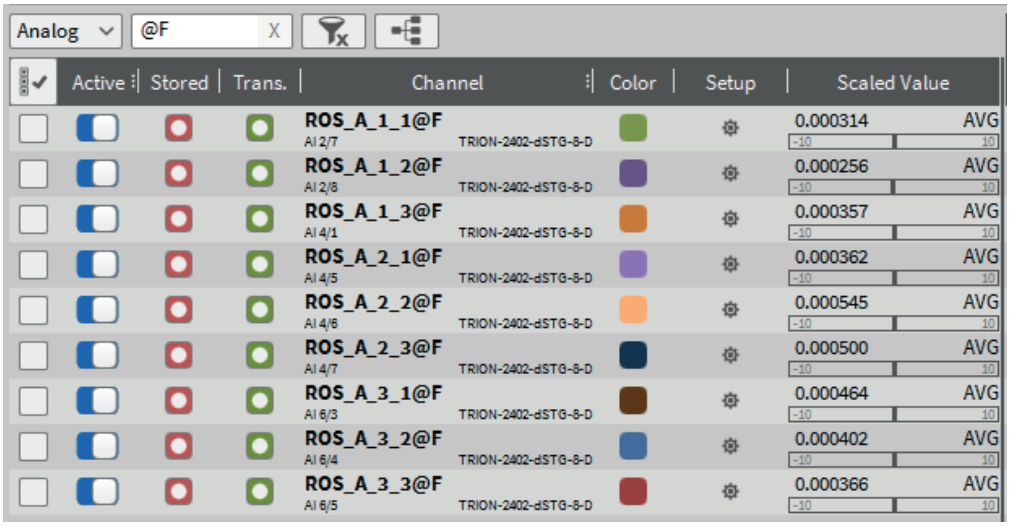

Figure 4: TRANSFER settings from expansion instruments, and STORING can be individually defined for each channel.

OVERVIEW OF OXYGEN-NET FEATURES

> Systems with almost unlimited channels
> PAC-Technology for fast and efficient set up
> Redundant storing
> Auto SYNC-SETUP
> Various SYNC possibilities PTP, IRIG, GPS
> Remote Control (ie: from a wind tunnel)
> DATA-Source via TCP/IP streams for 3rd party application

300 CHANNEL DURABILITY TEST SYSTEM FOR FACTORY ACCEPTANCE TESTING

> The system specifications:
> 6x DEWE2 M13; 13 Slot mainframe
> 36x TRION-2402-dSTG-8-D;
  8 Channels 200kS/s @ 24bit bridge amplifier
> Sync. TRION-SYNC-BUS
> Redundant storing
> Sampling rate up to 200kS/s

THE EXPERT

CHRISTIAN GETHER

Mr. Christian Gether is a 41-year old technical engineer from Austria. After graduating from HTL Weiz he began work in the automotive development and testing industry at AVL Graz. In 1996 he joined DEWETRON and is now product manager and senior application specialist for measurements in the fields of electrical power, rotating machines, strain & vibration as well as engine analysis.

FURTHER QUESTIONS? **CONTACT THE AUTHOR:**
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