

WHITEBOARD

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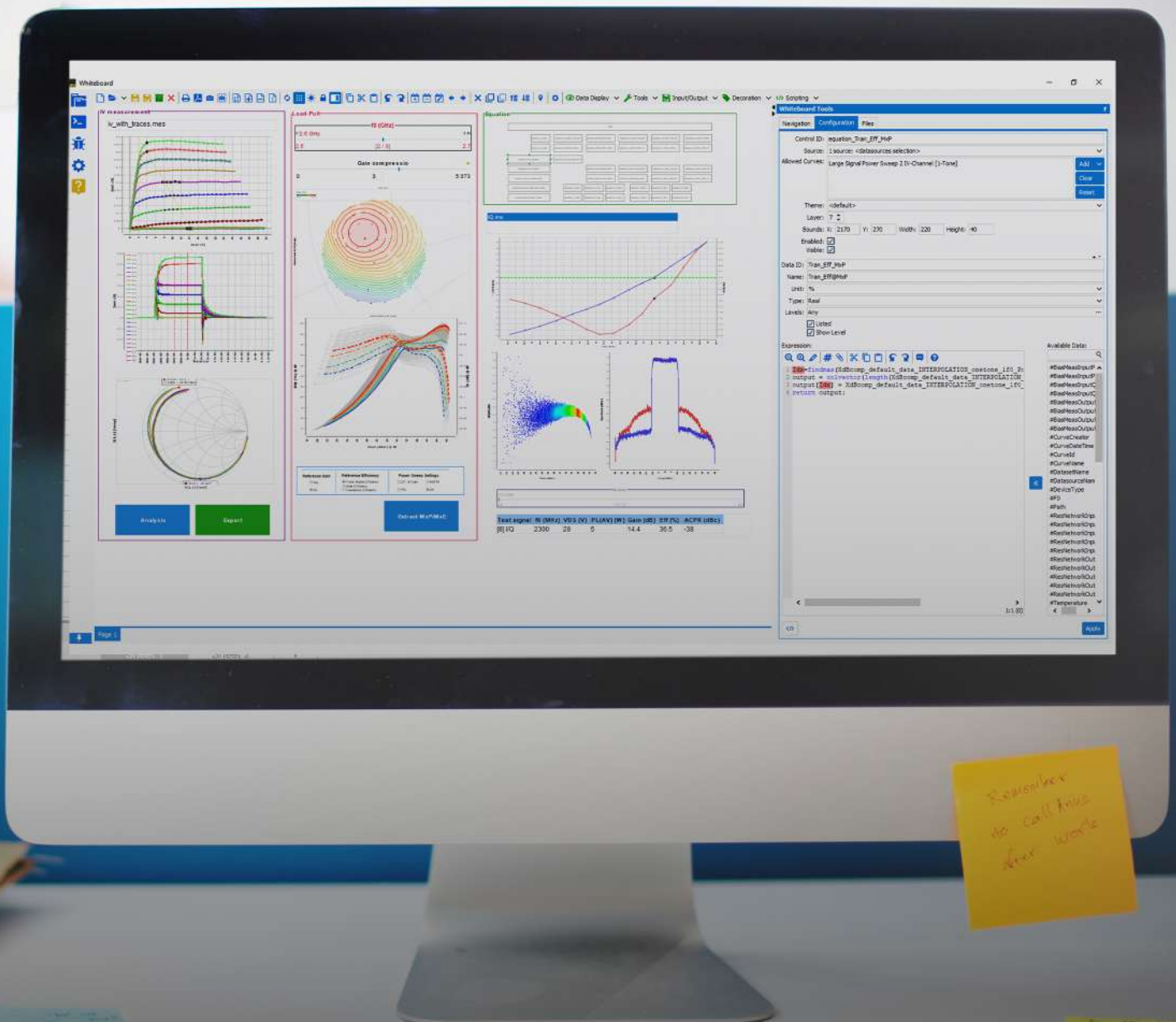
Leverage your data successfully



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PART 1

WITEBOARD PRESENTATION



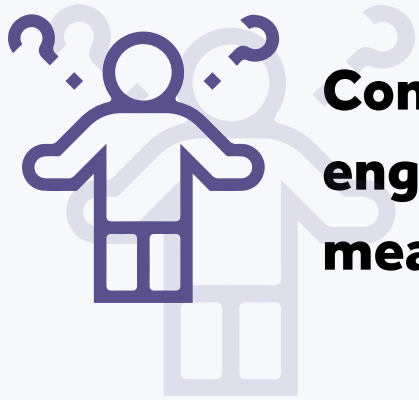
WHITEBOARD



INTRODUCTION

Whiteboard is a tool needed by engineers and their team or customers to analyze and leverage the data generated by their **measurement setups or simulation software**.

A data analysis software must help engineers work on different data to arrange the information **efficiently**, explain the behavior of the device under test **clearly**, present the measurement report to their customers **properly** and extract needed information to make **rational conclusions** about their product.



Common problems met by engineers when trying to analyze measurement or simulation data:

- Available visualization tools are not complete with supporting their data analysis needs.
- Efficient bridges are not available between the different commercial CAD tools and measurement platforms.
- In-house developments to complete their data analysis require advanced programming skills or a specific development team.
- There is a lack of standardization in the data analysis, which reduce the efficiency of the group.
- Multiple interfaces and workspaces increase the debugging and internal support time.
- Time is wasted in manipulating the data rather than analyzing it.
- Existing visualization tools do not support company growth in terms of licensing.
- Application Engineers spend most of their time generating reports than developing products.
- Reports need to be redone at each design iteration or measurement work.
- Static reports or datasheets only display a small portion of available information and increase the end customer support time.





To solve these common problems, the Whiteboard offers the following key features:

- **Facilitate import and export data measurement or simulation file format commonly used with RF softwares**
 - o Import : *.sp, *.znp, *.snp, *.ynp, *.mtp, *.trc, *.mps, *.lp2, *.lp3, .spl, *.iwf, *.lp, *.csv, *.cst, *.swp, *.meas, *.cti, *.sp, *.imx, *.im (n=1->4)
 - o Export : same format as import +*.pdf, *.mdif
- **Predefined templates for RF data analysis**
- **Prebuilt post-processing functions (depending of the software modules activated with your Software licence)**
- **Page style and size can be defined to ensure consistency with your internal documentation**
- **Embed your logo, pictures, text description**
- **Access to Dynamic graphs based on parameter adjustment, rather than a multitude of graphs**
- **Enable advanced data post-processing and data filtering using the Whiteboard Scripting tool**
- **Enable to export and share data management templates under the format of a Whiteboard Deployed Viewer or Whiteboard Free Viewer**
- **In combination with the SCRIPTING tool, users can even create customized buttons (Toggle, radio button, slide bar, checkbox...) connected to specific scripts, which can activate all the functions offered by the various modules supplied with the license. Customized IDE (Integrated Development Environment) can then be developed in the Whiteboard to script measurement sequences, or advanced post-processing and data display functions.**



PART 2

WHITEBOARD MODULE

WHIT-10: Whiteboard Editor

WHIT-11: Whiteboard Deployment Service Add-On

WHIT-20: Whiteboard Deployed Viewer

WHIT-30: Whiteboard Deployed Free Viewer

SCRIPT: Scripting Add-On

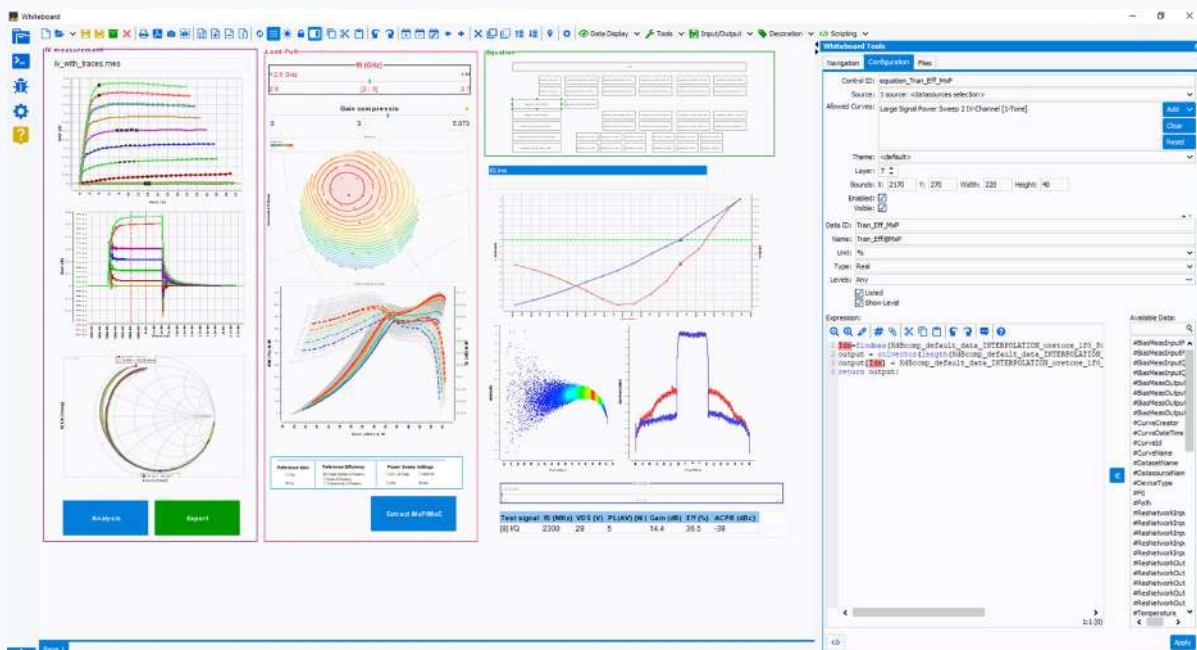
WHIT-10: Whiteboard Editor

The Whiteboard Editor WHIT-10 module allows engineers to develop their ideal data analysis templates.

If in your workflow :

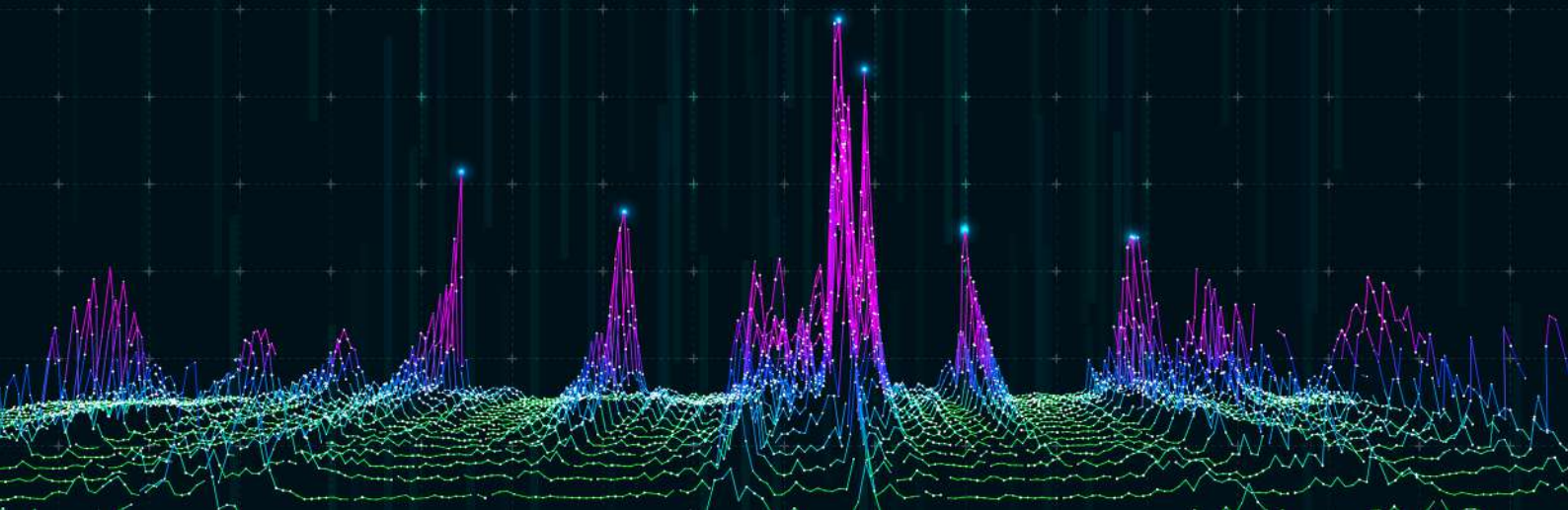
- You struggle with the limitation of your visualization Tool.
- You need to switch between different interfaces with different tools for different file formats.
- You need to manipulate multiple files to analyze some information.
- The number of graphs and displayed parameters is limited.
- You want to adjust your workspace to explore more in-depth the results obtained.
- You want to be more creative in the manner of presenting your results.

Then, the Whiteboard Editor is for you. This one allows the development of flexible data analysis templates tailored for your needs. It allows adjusting the visualization parameters and contains the necessary controls to make the interface more user-friendly and easier to read.



The Whiteboard supports different measurement data in several formats given by IVCAD, IQSTAR, or third-party measurement platforms. You can easily display

- S-Parameters
- Nested frequency and Power measurement sweeps
- Modulated Signal measurements for different parameters
- Load Pull data to design matching circuits



Defaults graphs are proposed according to the file formats and the data content. Drag on drop the chart frame, and pre-optimized figures are then displayed.

Then, the Whiteboard Editor is for you. This one allows the development of flexible data analysis templates tailored for your needs. It allows adjusting the visualization parameters and contains the necessary controls to make the interface more user-friendly and easier to read.

When using simulation tools such as VISION or third-party RF simulators, data files can be multidimensional with customized parameters. Because of the potentially unlimited number of dimensions explored during the simulation work, the Whiteboard is an unrivaled tool when both flexibility and performance are needed to extract the files' core information.

If it's important to display the behavior of the design or the device under multiple conditions, the Whiteboard data illustration is based on a "Parent-Child" structure. This characteristic allows each control (*Graph, Tables, Wafer, Filters...*) to use data from either the input file or another control.

Using a multipage structure, the analysis tool offers the possibility to arrange the workspace in dedicated sections for an enhanced user experience. The data can be displayed in different formats:

- **Graphs (XY, Polar, Smith Charts, 2D and 3D)**
- **Tables**
- **Equations**
- **Pictures**

Multiple controls are available to navigate through the data and extract desired parameters:

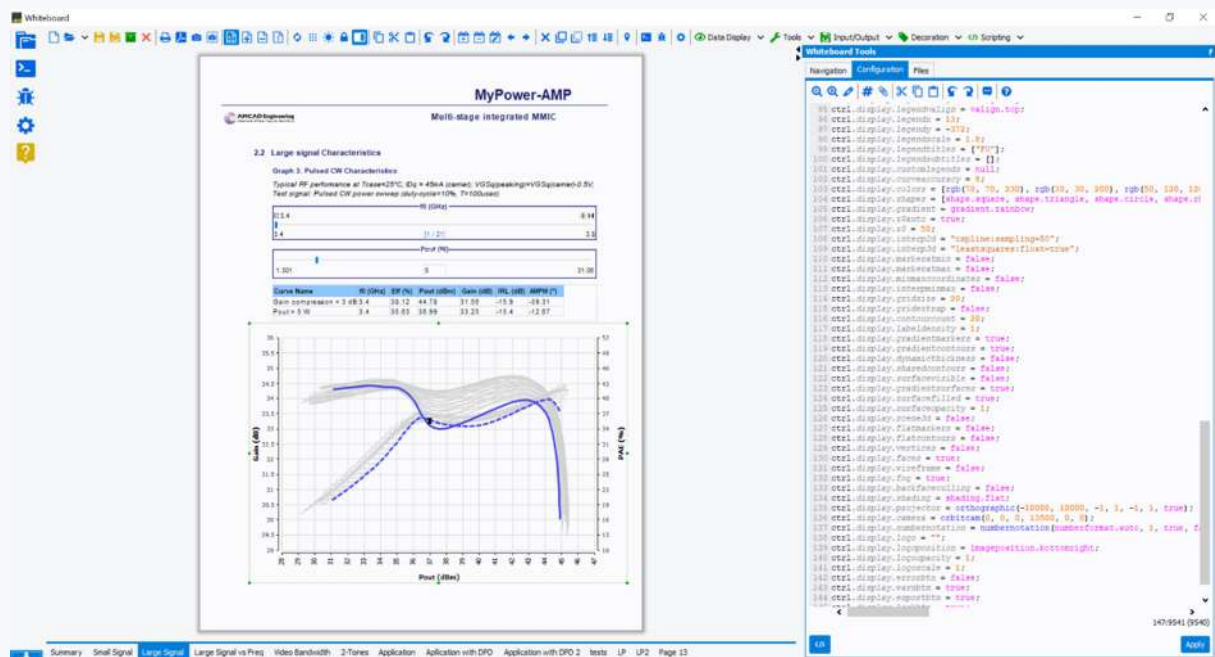
- *Filters* allow displaying curves at specific conditions like frequency, date, temperature...
- *Converters* allow converting specific curve types (S-parameters, Power Sweep, Video-Bandwidth, Modulated Power Sweep...) into "Generic" ones to compare data from different sources.
- *Mergers* allow merging multiple curves type in one.
- *Extractors* allow extracting curve values at specific conditions (Pout level, Pin level, Gain compression, ACPR level ...) through an interpolation process.
- *Stackers* allow stacking multiple curves to generate 3D graphs.

The user has full control of each graph's position, and size and the interface can be enhanced with explanatory text, banners, and images to make the analysis experience clearer and more user-friendly.

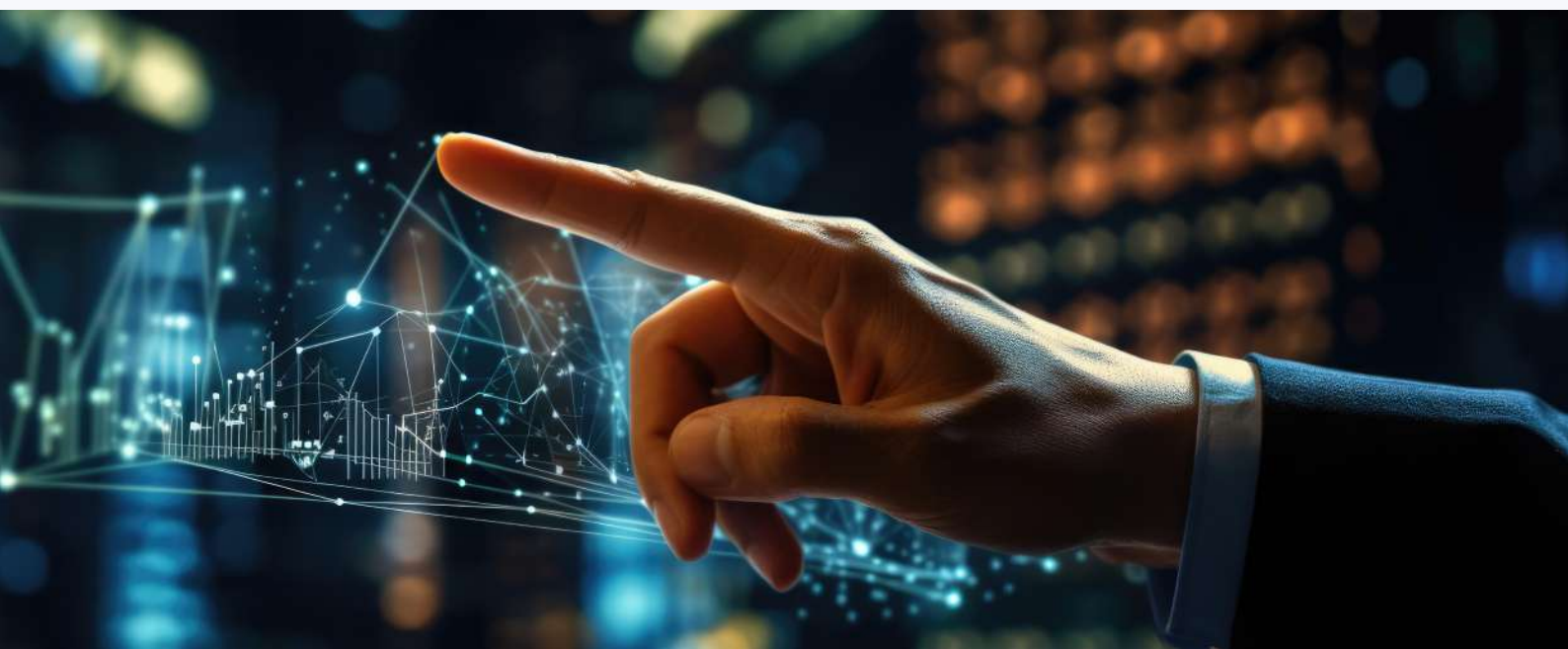
WHIT-11 : Whiteboard Deployment Service Add-On

The Deployment add-on of the Whiteboard, WHIT11, was specifically developed to help users facing issues like:

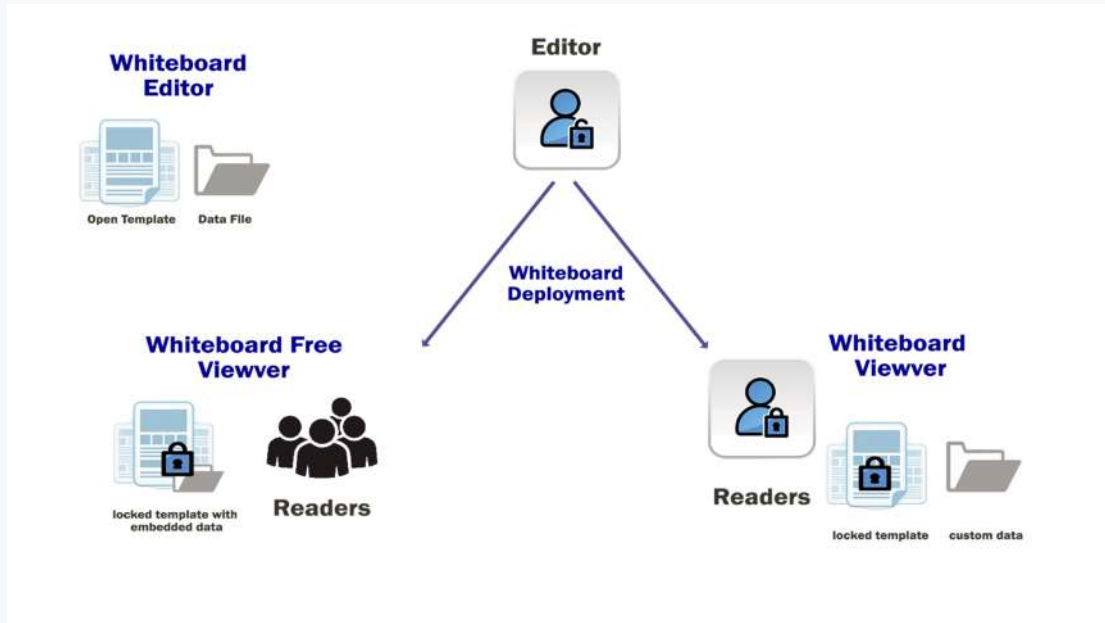
- Lack of standardization of the data analysis process inside a given group of users.
- Limited numbers of available licenses of the software
- Time wasting in generating reports for colleagues and customers.
- Different iterations to provide static reports to support customer requests.



When the WHIT10 Whiteboard Editor generates a new version of the template, the WHIT11 Deployment tool helps the user sharing this personalized template with other colleagues. These ones need to use Whiteboard Deployed Viewers to read such a template. This helps to standardize the data analysis process within its company or with customers in the format of an interactive report.



This option offers a competitive tool that supports a company's growth by providing the right means to complete the work and provides a flexible solution in a timely manner.



This feature is not available when using other third-party RF commercial simulators which have not been designed to support this particular need.

The Whiteboard Deployment option allows generating a workspace to be shared within the company or with a group of users while allowing access to interactive data analysis controls and even to load other data source files.

Two Deployment options are possible with this module:

- **Whiteboard Deployed Viewer**
- **Whiteboard Deployed Free Viewer**

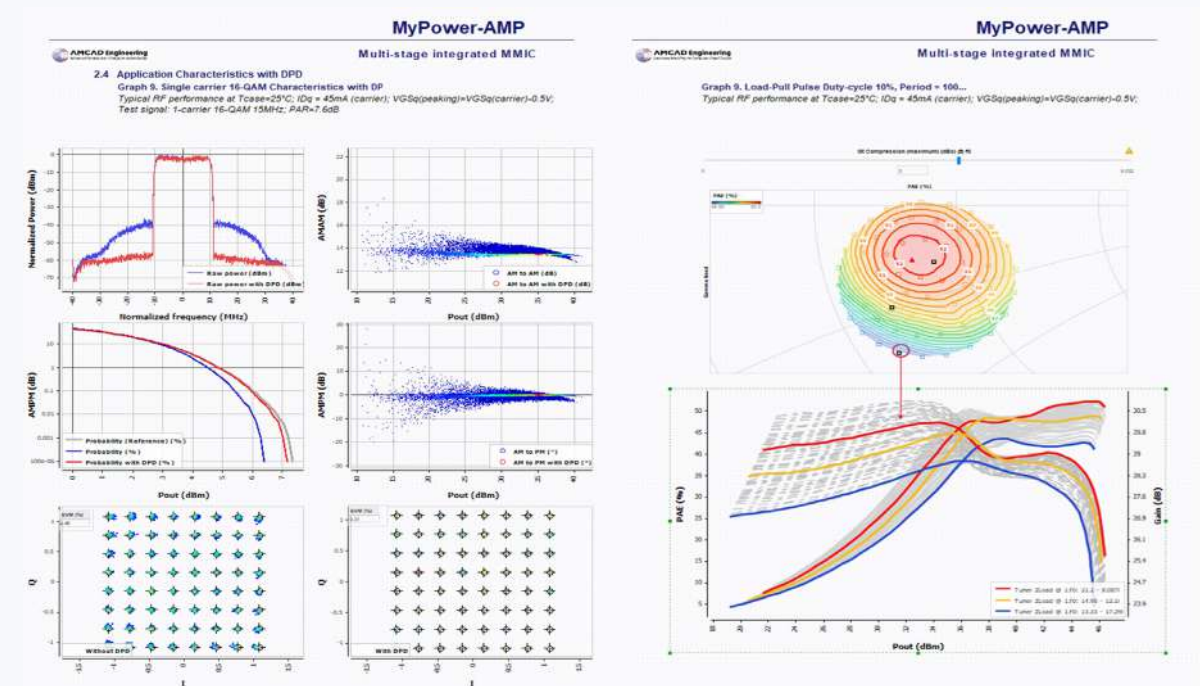
WHIT-20: Whiteboard Deployed Viewer

The WHIT20 Whiteboard Deployed Viewer enables the opening of WHIT10 templates delivered through the WHIT11 Deployment tool.

By generating a customized template, the editor provides an enhanced team experience when using the company's data. He also decreases the time wasted by his team in managing the data because the post-processing template is already qualified and ready to be used by the group.

The deployed Whiteboard Deployed Viewers are multiple copies of the workspace. Each WHIT-20 Whiteboard Deployed Viewer requires a license. This allows new data generated during measurement or simulation work to be reloaded, and the data analysis template built using the WHIT-10 Whiteboard Editor to be reused to exploit this data fully and quickly.

By sharing all the interface's interactive capabilities applicable to an unlimited number of data files given by a simulator or a measurement bench, the team experience is greatly improved as the viewer tool streamlines everyone's data workflows.



Different templates can be developed to respond to the need of each group in the company. Therefore, the Whiteboard Editor with Deployment options can address multiple needs within the same corporation:

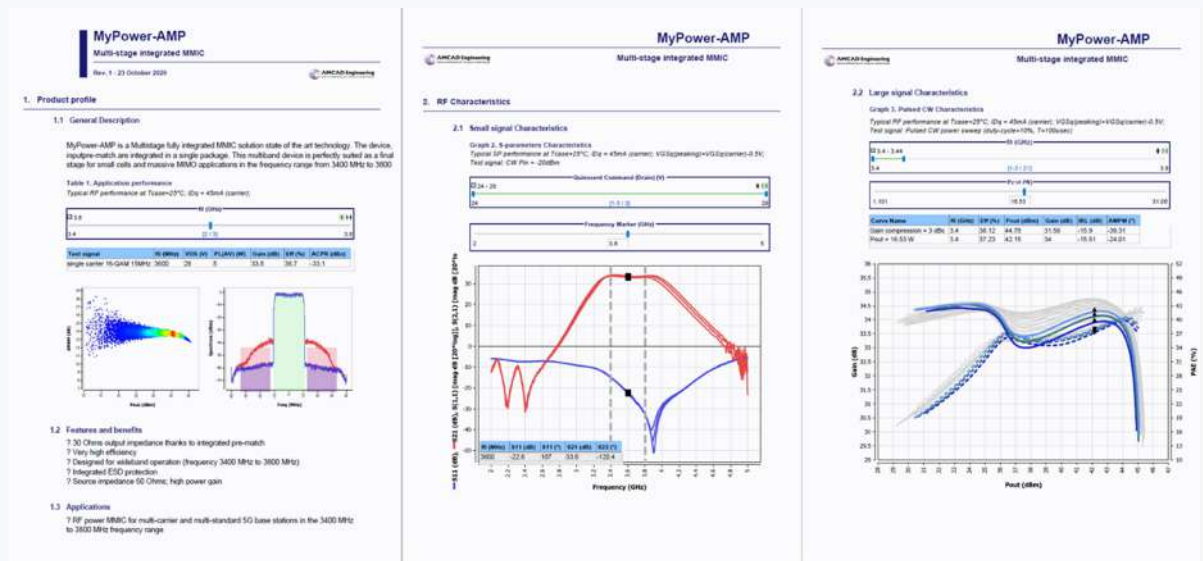
- Standardize data processing.
- Extract the core value of the information from the company's database.
- Improve the team coordination.
- Offer an internal flexible solution.
- Sustain the growth of the company by offering a robust software solution.

WHIT-30: Whiteboard Deployed Free Viewer

The WHIT30 Whiteboard Deployed Free Viewer, delivered through the WHIT11 Deployment tool, enables the opening of WHIT10 templates associated with specific data files. The number of copies of the WHIT-30 Whiteboard Deployed Free Viewer is directly managed by the owner of the WHIT-10 Whiteboard Editor upgraded with the WHIT-11 Whiteboard Deployment Service Add-On. This solution is provided as a yearly service, without any limitations regarding the number of copies.

Application and Marketing engineers usually aim to generate data reports. Then, they want to share these reports within the company and with their end customers to promote their product specifications because of the latest performances, but they are facing some issues:

- Multiple measurement iterations lead to multiple reports and datasheets.
- Static documents lead to multiple questions from customers to see the results for different and new operating conditions.
- The spread of information is limited if the reader requires a specific paid license to open the file.
- 50% of their time, on average, is spent collecting the data for their customers rather than doing their core activity.



For these reasons, AMCAD engineering developed the WHIT30 Whiteboard Deployed Free Viewer module.

This one offers interactive measurement reports that enable their customers to change some conditions and see the impact of this new condition on the device's performance. This interactivity is more efficient than asking for a new version of a static document.

In addition, it is possible to generate report templates, where a simple selection of the data file populates all the graphs and tables in the final report with the new values. This way, the application engineer can spend more time on his work, and the colleagues and customers can have access to all needed data to appreciate the end product.

Note: Contrary to the WHIT20 viewer module, the data in the WHIT30, Whiteboard Deployed Free Viewer, is hardcoded inside the interactive report. The reader will not be allowed to change the original data. He will only be able to tune the parameters made available by the editor to refresh the different graphics and tables.


```
mirror_mod = modifier_ob.modifier_mod
# set mirror object to mirror_ob
mirror_mod.mirror_object = mirror_ob

if _operation == "MIRROR_X":
    mirror_mod.use_x = True
    mirror_mod.use_y = False
    mirror_mod.use_z = False
elif _operation == "MIRROR_Y":
    mirror_mod.use_x = False
    mirror_mod.use_y = True
    mirror_mod.use_z = False
elif _operation == "MIRROR_Z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True
```

SCRPT: Scripting Add-On

The WHIT10 Whiteboard Editor can be empowered using the SCRPT scripting module.

The scripting Add-on was developed for advanced users who are willing to customize their interface and templates beyond what is available with the configuration panel.

Common limitations that are reported by engineers who are configuring their visualization tool are:

- Limited equation editors
- The need to use external software to run advanced post-processing calculations.
- Lack of automatization process in the display configuration

The scripting mode enhances the whiteboard solution with a script editor where all the Whiteboard functions used to configure the workspace are made available to customize. Therefore, complete flexibility of the configuration can be automated by script. On top of that, a list of useful controls is made available to initiate different scripts, among them:

- Radio buttons
- Edited text field
- Buttons
- Check box

The script editor supports syntax coloring, autocompletes functions as you type. It also highlights matching braces, allows for code folding, and has additional features to help develop scripts more quickly. Error messages and output are shown in the log window, displayed inside the script editor.



PART 3

OPTIONS CONFIGURATION

WHITEBOARD OPTIONS CONFIGURATION

Modules	Workspace Create/open/ save *.iw files	Open *.iwx Workspace	Save *.iwx Workspace	Import data files	Write Scripts	Execute Scripts	Requires license	Prerequisite
WHIT10 : Whiteboard Editor	✓	✓*		✓		✓**	✓	
WHIT11: deployment Add-on			✓				✓	WHIT10
WHIT20: Whiteboard Deployed Viewer	✗	✓		✓		✓	✓	
WHIT30: Workspace Free Viewer	✗	✓		✗		✓		
SCRPT: Scripting Add-on					✓	✓	✓	WHIT10

*: Whiteboard editor opens deployed workspace in viewer mode only.

** : Scripts can be executed only for the deployed workspace (*.iwx files)





PART 4

MAINTENANCE & SUPPORT

MAINTENANCE

PROGRAM*

AMCAD Engineering considers maintenance a critical asset for its customers to provide a premium assistance program for one year from the delivery date. After this initial period, you will be kindly invited to extend this maintenance through a support agreement.

Three different maintenance programs are available:

- One-year maintenance and support agreement
- Two-year maintenance and support agreement
- Three-year maintenance and support agreement

Also, with ongoing customer support, this maintenance program keeps your software version up to date so that you can benefit from all the improvements and fixes available with the latest release. For legacy perpetual licenses, the maintenance program is essential to keep certain WHITEBOARD features enabled, such as the Whiteboard Deployment Service Add-On.

Additional charges apply if the maintenance program has been interrupted for any reason. For current leased licenses, the maintenance program is part of the leased solution. Customers on the maintenance program can request bug fixes if any. Bug fixes are collected with all customer requests and are prioritized by AMCAD. Corrections are integrated into subsequent releases, for all users.

SUPPORT

PROGRAM*

Prerequisite: Active maintenance program.

This support program entitles you to the following services:

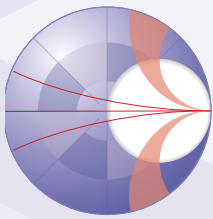
- Priority access to application engineers
- Special support session for each new version, to validate the backward compatibility of the functionalities offered in relation to your use cases.
- High-priority requests for a particular customer can be handled under a specific support program.

The support program is provided by our application engineers for a fixed number of hours according to 2 programs:

AMSP35	35 hours AMCAD Support Program
AMSP70	70 hours AMCAD Support Program

*Visit www.amcad-engineering.com/terms to learn more on Support And Maintenance Services and related SMSA Agreement.





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