



**An end-to-end platform for acoustic wave filter design,  
diagnosis and mass production yields analysis**



**Diamond Liu, Acentury Inc.  
diamond.liu@acentury.co**



## Acentury Introduction

Acentury (2011) specializes in developing test and deployment automation software for 4G/5G/O-RAN networks and RF component design software to help automate and accelerate R&D development.



An RF lab test and automation platform that mirrors your production mobile network and integrates test and deployment into one system workflow.



A cloud-native orchestration platform that enables telecom operators to automate and scale next-gen radio access deployment.



End-to-end passive component design, simulation and test tuning EDA software



An end-to-end platform for acoustic wave filter design, diagnosis and mass production yields analysis

Diamond Liu, [diamond.liu@acentury.co](mailto:diamond.liu@acentury.co)

# Proposal Introduction

Acoustic wave filter design, diagnosis and mass production yields analysis

## DESIGN&ANALYSIS

The Design & Analysis module will provide users direct circuit synthesis tool to perform comprehensive analysis of the overall RF performance.



## SIMULATION &OPTIMIZATION

Feature the practical mechanical model library and directly integrate with simulation software

## DIAGNOSIS & ANALYSIS

Provide the advanced diagnosis method by using state-of-the-art computer aided tuning method;

## MANUFACTURING YIELDS ANALYSIS

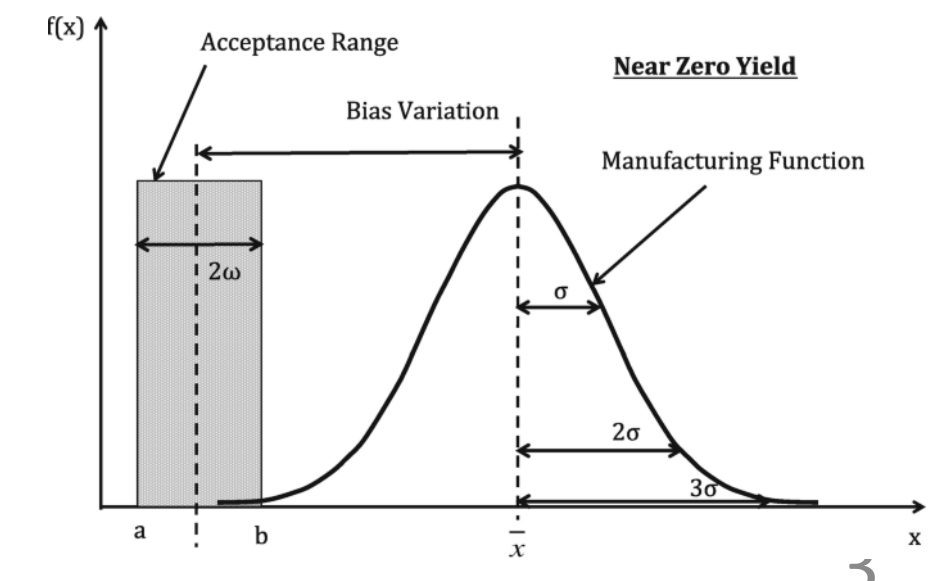
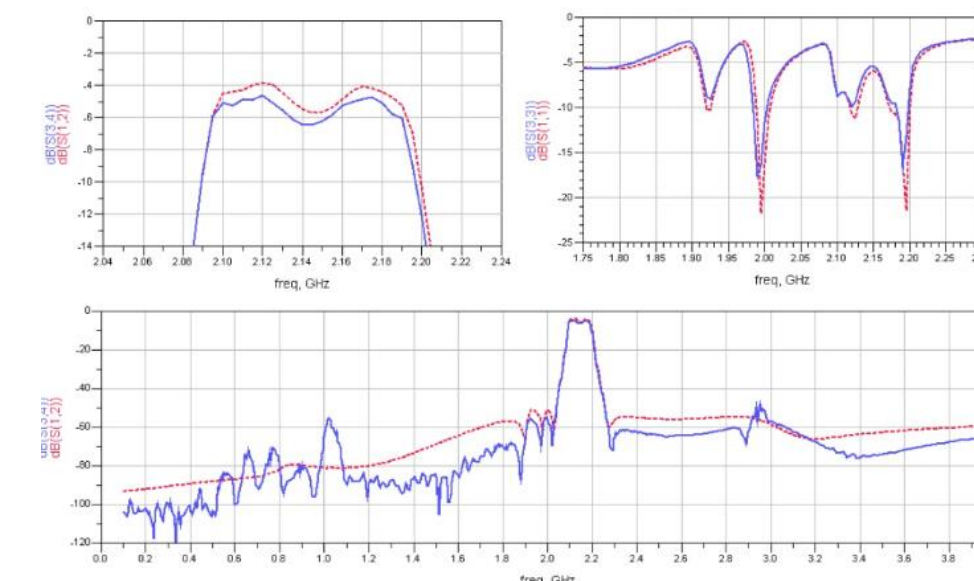
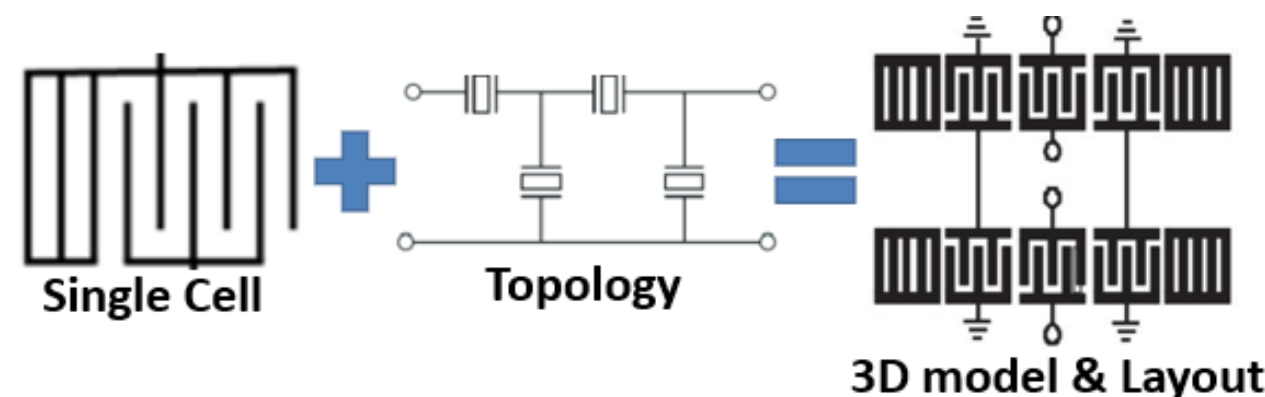
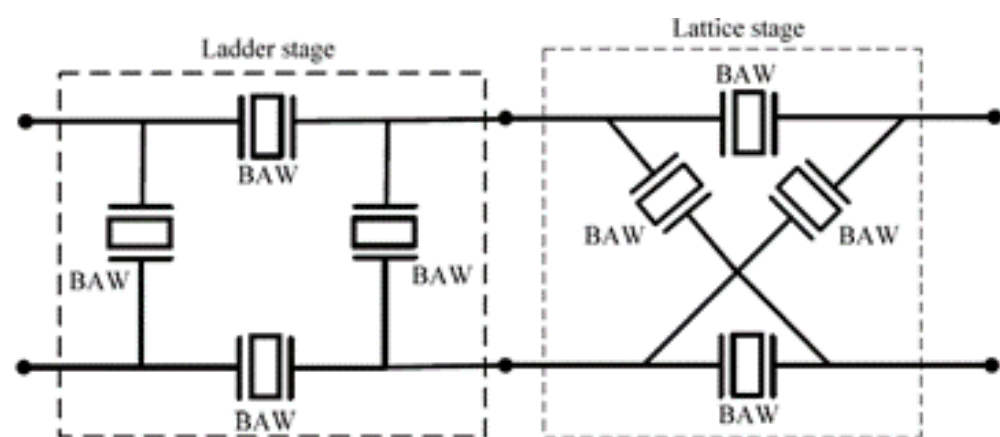
Through the prototype test data analysis to predict the massive production yields and feedback the improvement to design and simulation

- Various of basic BAW/SAW circuit model;
- Direct synthesis on the request circuit configuration;
- Basic circuit model analysis and optimization

- This direct-to use basic single cell model library & Various state-of-art optimization;
- Auto physical layout generator & the package and entire module will be provided;

- The advanced computer aided tuning technique;
- Parasitic effect analysis & impedance match tool;
- Circuit & Model sensitivity analysis;

- The “Digital-Twin” concept will be applied to build up the feedback loop;
- Yields analysis based on the prototyping data and design physical parameters to build up the probability distribution;



# Proposal Introduction

## Outcome: **Basic Design Package**

The basic design package allows users to perform comprehensive analysis of the overall RF performance.

- Circuit Model Synthesis;
- RF Performance analysis;
- Key parameters analysis;

## Outcome: **Computer Aided Tuning(CAT) Package**

The advanced CAT tool including various analysis methods will provide user instruction to diagnose the RF performance;



## Outcome: **Simulation & Optimization Package**

The Sim&Opt platform will provide user various basic BAW/SAW resonator cell as the model based library; By integrating with several 3<sup>rd</sup> party simulation software, users will be able to perform the simulation and optimization.

- Model library build up;
- Single resonator unit analysis;
- Machine learning algorithm;
- 3<sup>rd</sup> party simulation tool integration;

## Outcome: **Yield Analysis Package**

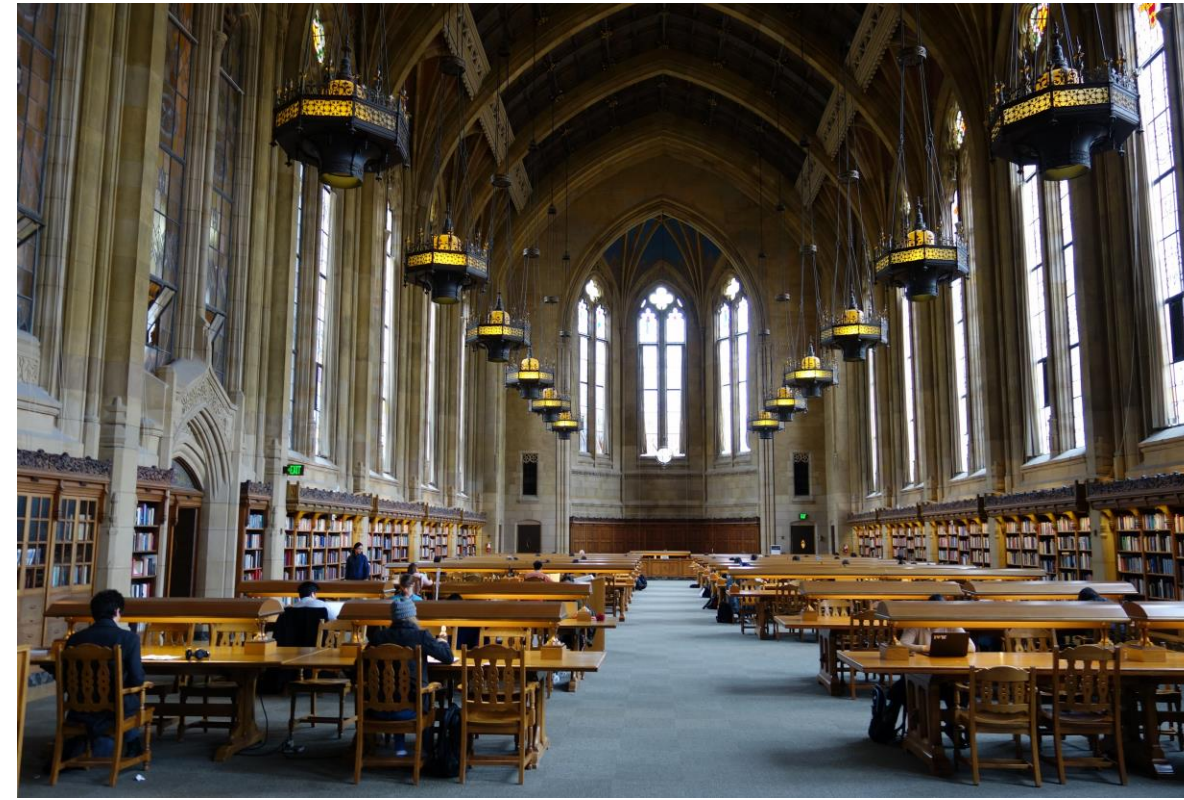
Through ML process, the platform will investigate the ‘digital twin’ simulation data and estimate the mass production yield. This information can be used to derive the likely outcome on the actual production line and provide feedback to the design outcomes.

- Tolerance analysis;
- Machine learning on yield prediction;

# Partners We Are Seeking

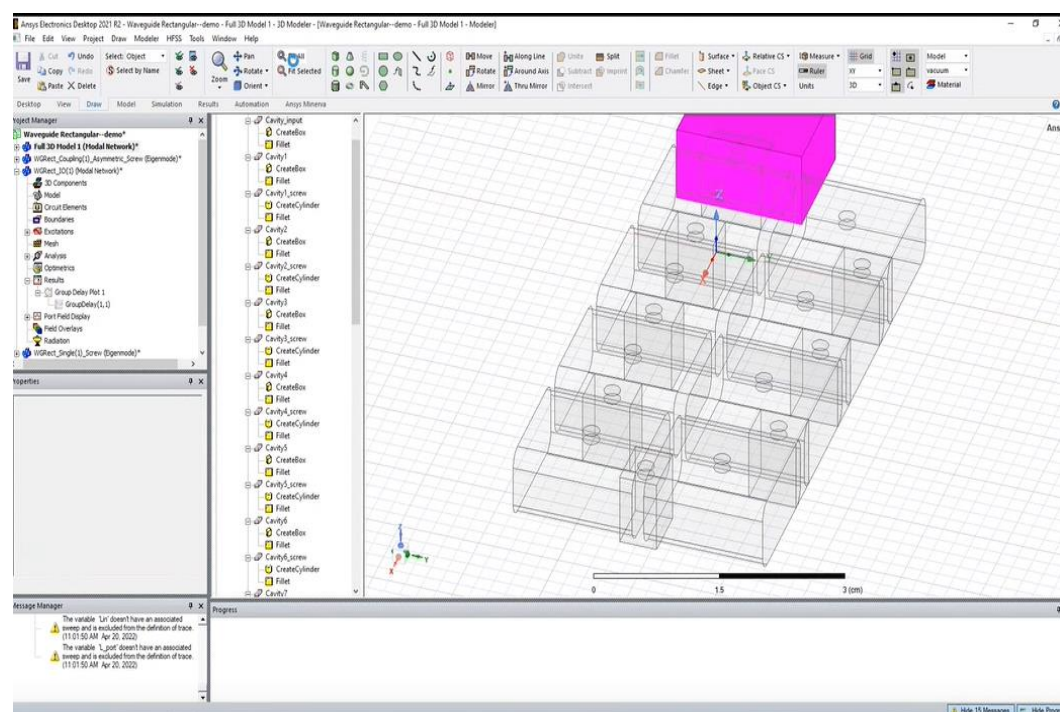


Research institutions

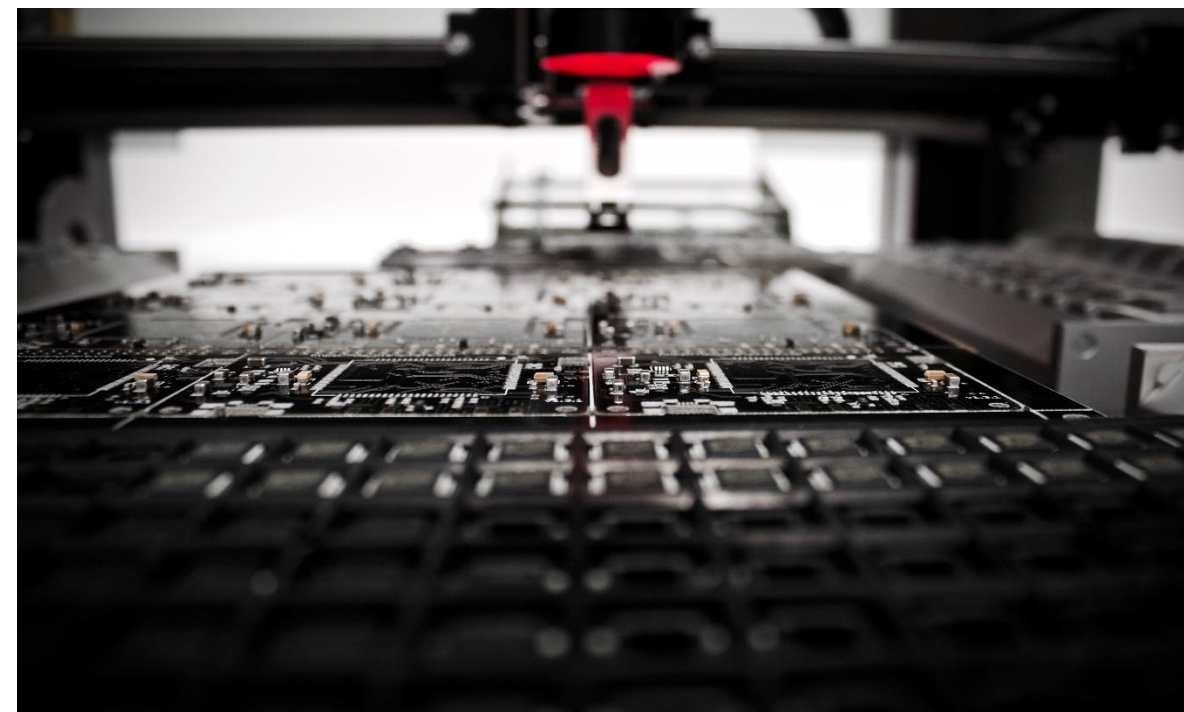


Academia

- We are actively looking for other industry and academic institutions to partner with
  - ✓ **Research Institution;**
  - ✓ **CAD software on BAW/SAW simulation;**
  - ✓ **BAW/SAW manufacturers**



CAD software providers



BAW/SAW filter manufacturers

# Contact Info



**For more information and for interest to participate please contact:**

Diamond Liu

E-Mail: [diamond.liu@acentury.co](mailto:diamond.liu@acentury.co)

Telephone: 905-554-3633

Postal Address: Richmond Hill, ON, Canada

Web : <https://acentury.co/>

