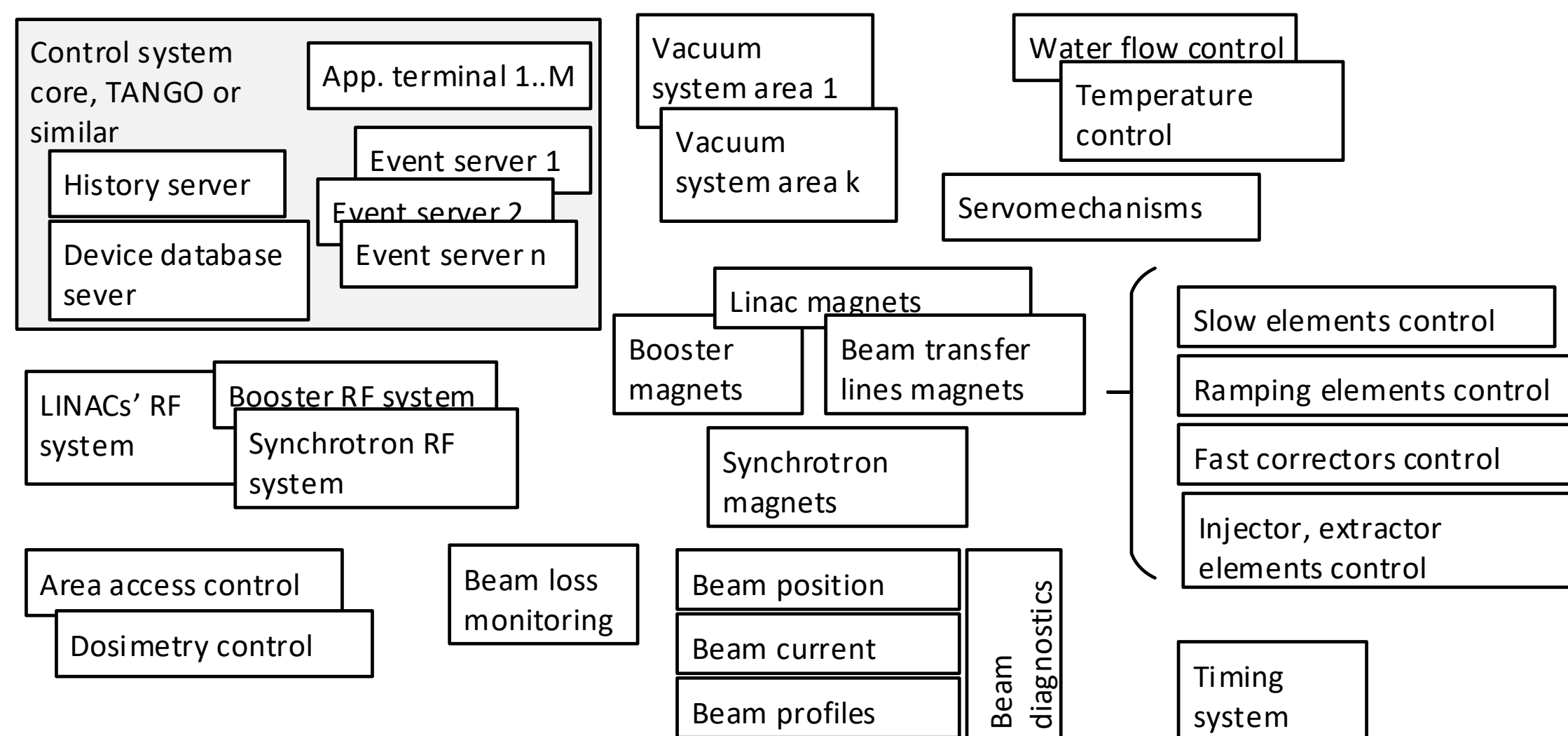


Status of Diagnostic and Control System Development for Russian New Light Source Project SSRS-4*

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Software development model according to Rapid Application Development (RAD) rules. The development stages are:

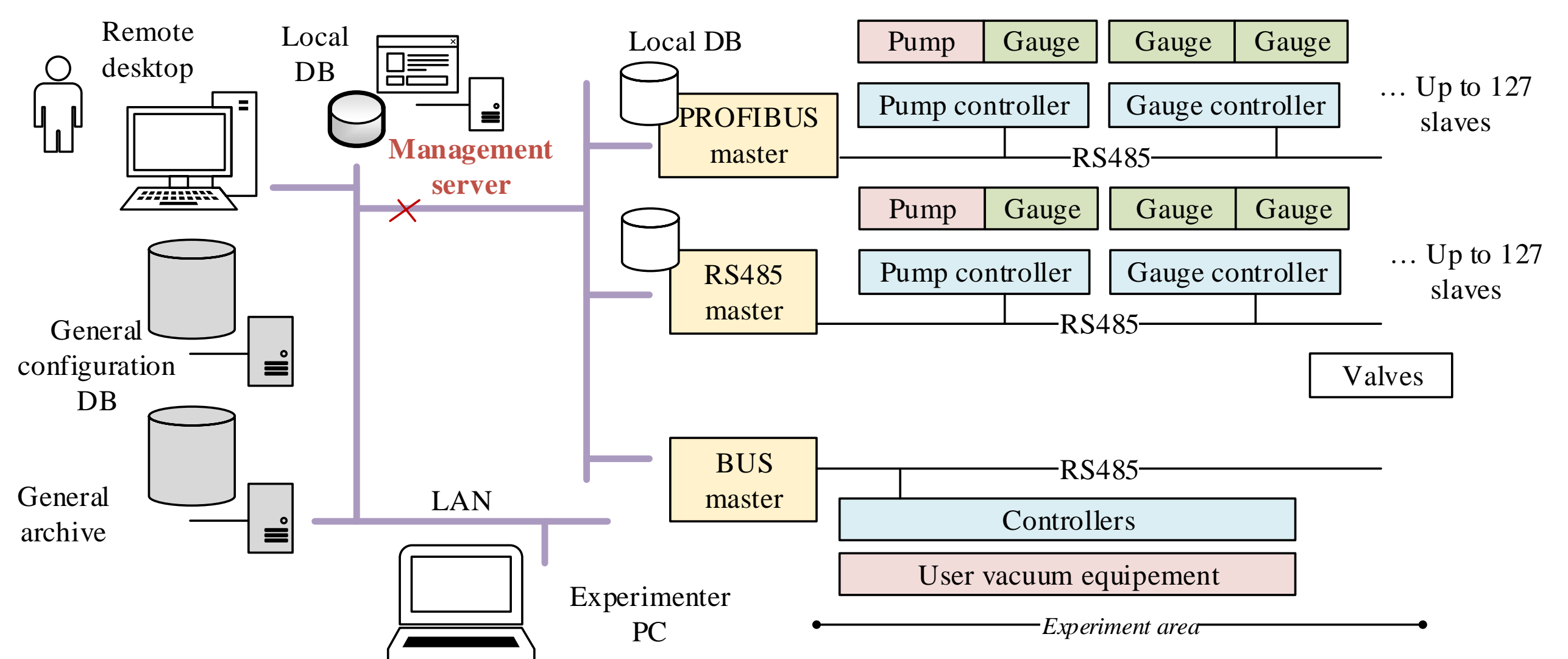
- Requirement planning stage
- **User design phase**
- Construction phase
- Cutover place

Specific RAD requirements:

- Modular design
- Skilled team of engineers and designers
- Commercial development tools
- Continuous user feedback

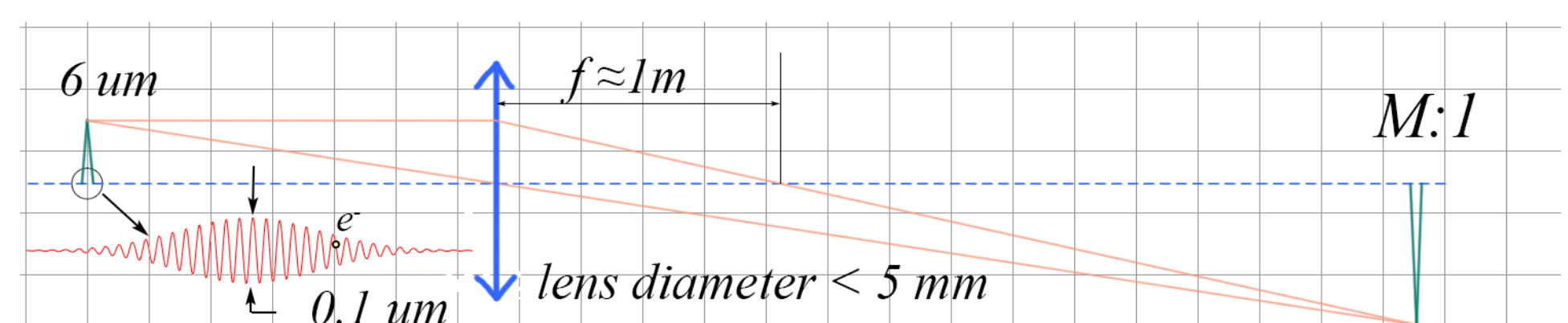
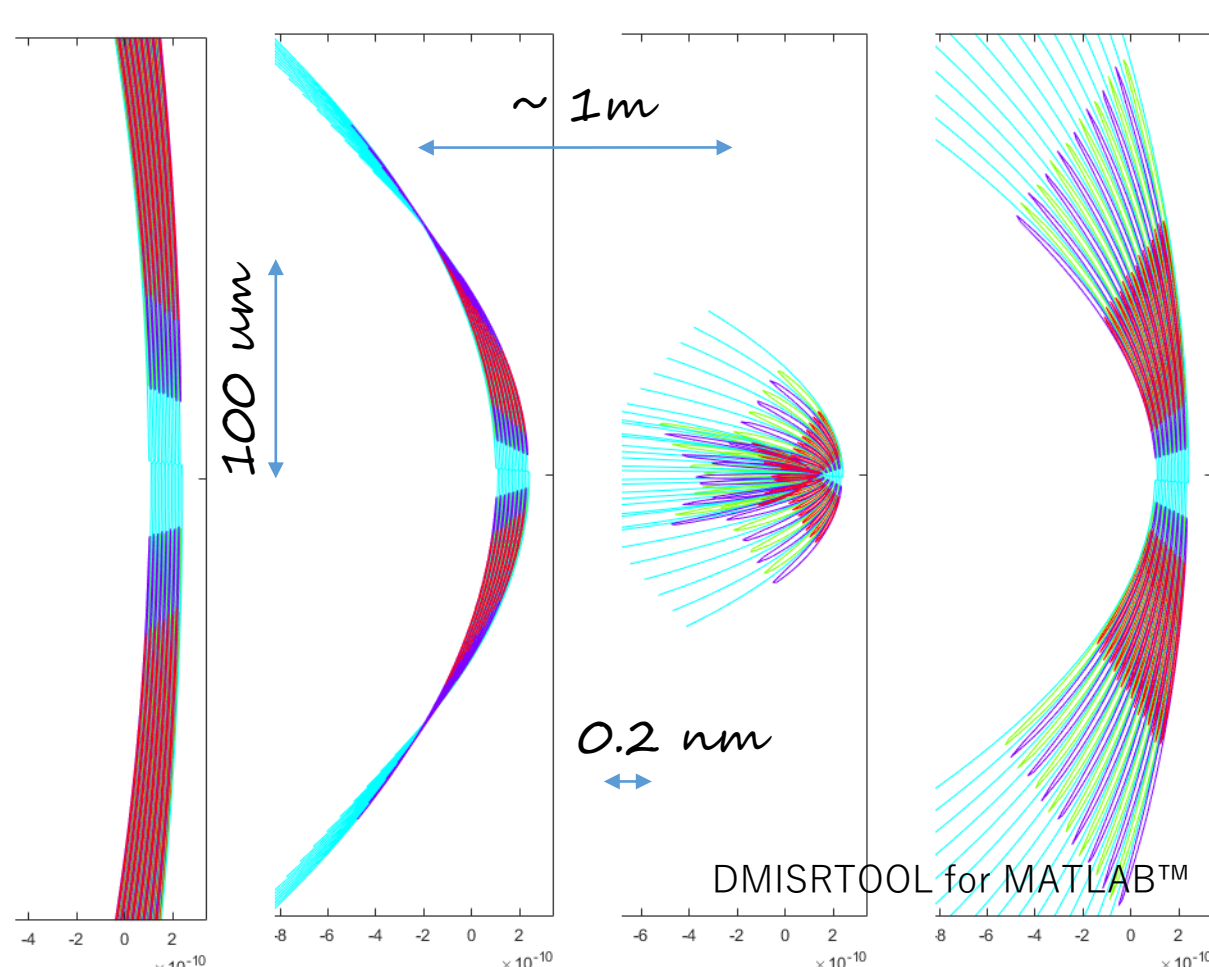
Distributed modular system design example (vacuum control)

- integrated module of the general control system
- 'on fly' extendible for the replacements, new equipment and user system integration
- PROFIBUS support as a most frequently used protocol
- application layers realization for the 'stripped' RS485 bus

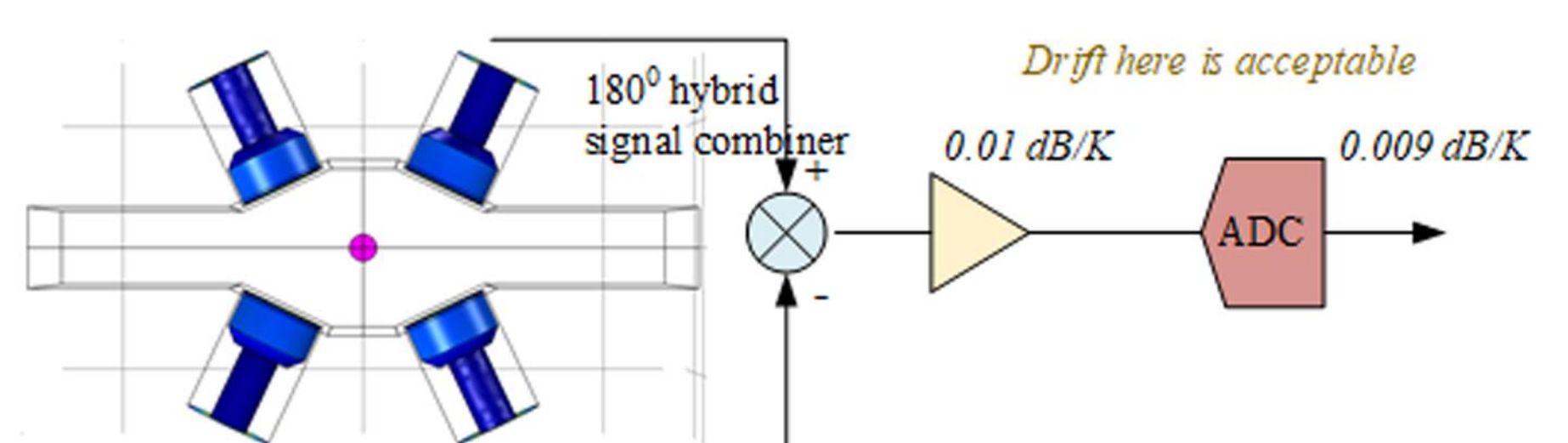
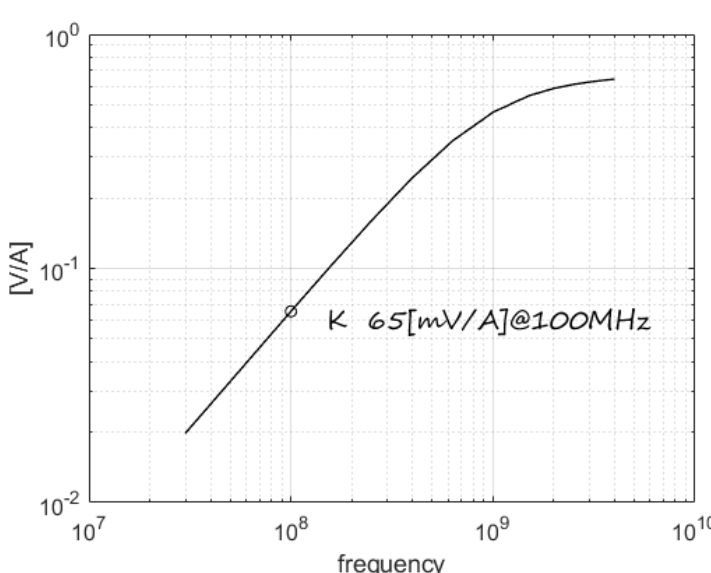
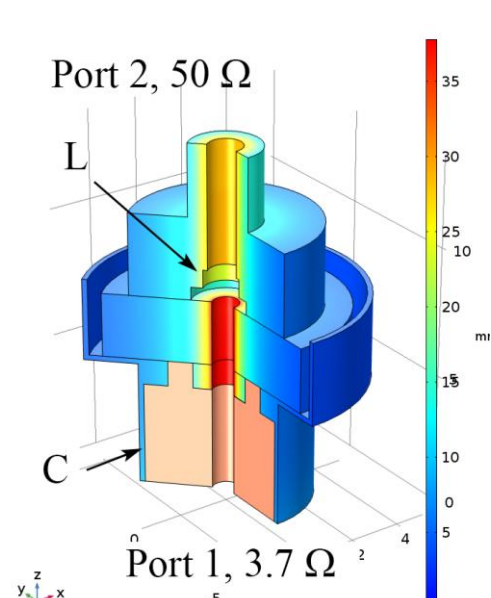


Low emittance measurements.

- Radiation pattern of single electron is diffraction limited, it is similar to the field of the electromagnetic dipole with same wavelength λ .
- Better spatial resolution could be achieved by using shorter λ .
- A dedicated undulator with shortened period, reduced down to 5 mm, by cost of radiation strength proposed for 10 micrometer range profile measurements.



Bunch by bunch measurement requires wide bandwidth electrodes combined with the electronics. The high accuracy of absolute position measurement, in turn, demands on fly recalibration or analog signal pre-processing.



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