Info day & Brokerage event 6G FEM Call

Francisco Ignacio Serradilla
Chips JU Office

26 May 2026

EUROPEAN PARTNERSHIP

Context

Developing the FEM is critical for the competitiveness of European suppliers, but there are a multiplicity of technological challenges:

- Enable extreme massive MIMO AAS in a compact form factor.
- The increase of antenna elements (>1000): requires an increase of RF processing capability.
- The front-end IC should support 6G use cases, which calls for a highly reconfigurable front-end solution and chiplet solutions that cover a multiplicity of functions and require integration in a SiP with advanced packaging requirements

SNS Call

- Design and validation activities at Tx/Rx level, addressing use cases SBFD/ISAC and HBF/TDD
- Validation of technological building blocks, system integration and evaluation of an AAS demonstrator

Chips Call

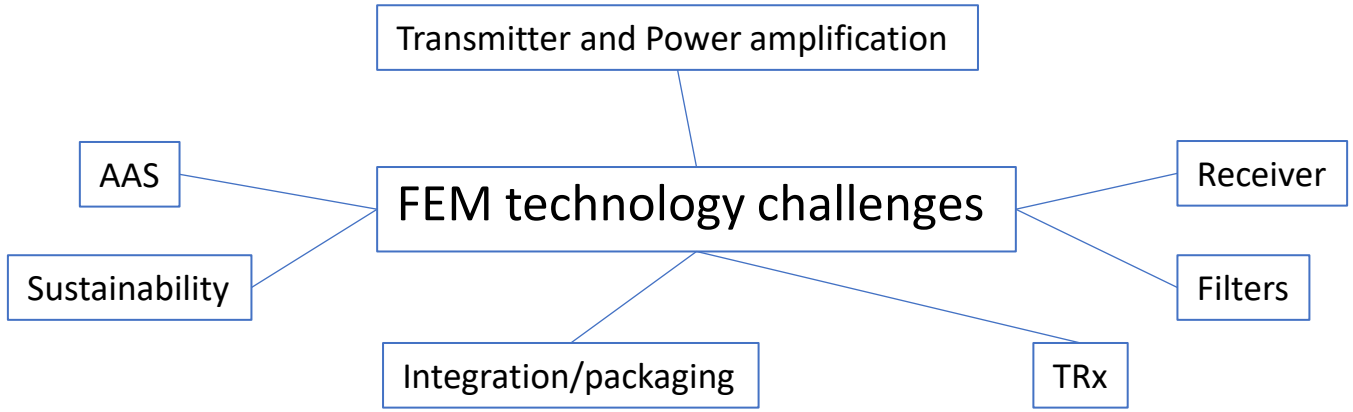
Address main building blocks of a FEM with heterogenous technologies integration at subsystem level, preparing the future complete system validation

Close aligning with the work in SNS. Collaboration between the two consortia in SNS and Chips JU calls

Expected outcomes

- Design/specification and implementation/testing of the key microelectronics building blocks of a FR3 FEM, towards a future complete integrated FEM system.
  - Optimise cost-performance trade-off,
  - Operational implementation of spectrum sharing within FR3 FEM
  - Enables large arrays integration, high bandwidth for carrier aggregation with broadband RF transceivers, SBFD, ISAC.
  - Builds up on core technologies and IP blocks for further package integration and base die development for implementation of most critical functions and subsystem integration for future complete integration and verification on real environment.
  - Stimulates related progress on design tools, for PDKs.
- Create synergies with the FEM project of SNS, reinforce European ecosystem of microelectronics suppliers for telecom industry, collaboration with relevant Pilot Lines is encouraged.

Scope



Design environment compatible with FEM technologies at TRL 5/6, development tools (PDKs) at TRL 7/8

Research on the blocks until more integration level, at least until subsystem TRL ~ 5

IP blocks expected at TRL ~ 3, with lab maturity

- Purely pre/competitive, but with clear perspective towards eventual commercialization by EU industry
- Proposals should include focused and measurable objectives and exploitation plan. Also explanation on how they plan to coordinate the activities with the SNS FEM call to contribute to the final system integration/validation levels 7/8

Thank you!