

Sample definition Project management

| Category | Description | Use | Nature | Manufacturing |
|-------------------|---|--|---|---|
| Functional sample | Sample with one or more functions or concepts | Test of concepts or functions to ensure the integration into a product during any pre-development (e.g. within the context of a feasibility study or before a concept is passed on to acquisition) or product development stage (e.g. for unforeseen incidents) | limited | any |
| A-sample | Sample with limited functions | Test of the concept freeze while in its critical (still hazardous) functions | Limitations of the functions with regard to customer and internal specifications: e.g. operating temperature, optics, dimensions. Not suited for permanent testing | Special production (Sample construction) Or modification of existing products only final materials E.g.: Temperature sample, photometric prototype (ALU block), STL |
| B-sample | Sample with all functions without guarantee Exception SW: vehicle SW such as diagnosis functions very often only present in release samples | To test all functions and the technical requirements including permanent testing Test in the vehicle and on the test stand Sample for design validation (DV) | All functions are available and installation dimensions according to the series. Possibly not all customer specifications ensured | Parts from test or auxiliary tools . Mostly from final materials E.g.: ALU-tool SW has the specified architecture |
| C-sample | Sample with all functions guaranteeing that functions are protected in theory | Tests to achieve "Technical Release" (laboratory tests, trial assemblies) Sample for product validation (PV, qualification) Sample for process validation | As B-sample, but specifications reached for sure. Tolerance assessment, fit description,... → theoretical safeguarding | Parts from tools produced in series and manufacturing processes close to production. Manual assembly of advance ISIR (laboratory tests) allowed Final Final materials and arrangement of the components |
| D-sample | Sample with all functions guaranteeing that functions are protected in practice | Pilot production with proof of the production reliability Initial Sample Inspection Report (ISIR), capability study like measurement tool capability (also measurement system analysis "MSA"), process capability, machine capability) PPAP Basis for homologation | As C-samples Compliance with quality requirements statistically guaranteed Serial parts that are used for initial sampling, with the objective of approval for product-series delivery (PSO) internally and by customer | Initial sample: Parts from tools produced in series mounted and inspected with standard manufacturing processes under standard conditions If necessary, with deviation from initial sample status as agreed with customer |
| Series production | Sales product | Proofs of quality according to specifications | Standard parts, series production status approved | Series production |