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| **Challenge** | **Code** | **Proposition** |
| Dependency on Supplier | C1 | Only few suppliers are able to procure suitable AM raw materials and/or parts, causing a lack of alternative suppliers |
| High Production Costs | C2 | Producing medical devices in AM has production costs which are much higher than those of conventional manufacturing techniques |
| High Investment Costs | C3 | The investment costs necessary to purchase AM machines are very high |
| High Material Costs | C4 | The costs of AM raw materials are very high |
| IP Issues | C5 | The use of AM for producing medical devices is accompanied by issues related to IP infringements and data breaches |
| Social Sustainability | C6 | AM requires less workforce than conventional manufacturing techniques and hence employees are reluctant to its adoption |
| Standardization and Certification | C7 | There is a lack of standards and certification processes that complicates the use of AM for medical devices |
| Material Limitation | C8 | There is a limited variety of materials producible via AM |
| Specialized Workforce (Design Phase) | C9 | AM requires specialized workforce during the design phase to exploit design benefits such as those achievable through topology optimization procedures |
| Specialized Workforce (Production Phase) | C10 | AM requires specialized workforce to operate AM machines with proper knowledge on key decisions such as production parameters to be adopted, post process operations, … |
| Production Limitation | C11 | Production speed is limited and lower than conventional manufacturing techniques |
| Need for post-process operations | C12 | AM parts need to undergo to post-process operations (heat treatments, polishing, …) after production |
| Quality | C13 | AM medical parts are characterized by low quality |

**Table D1.** Summary of the challenges identified and corresponding propositions