Schedule strategies for Selective Laser Melting Multi Laser Scanning Systems have to consider objectives like evading material condensate or vaporized powder created by laser beams melting metal powder, establish synchronization among scan-units and minimization of total scan time. Here, we aimed to provide efficient solutions to these objectives for arbitrary constellations of scanners. We touched upon the fundamentals of Selective Laser Melting (SLM) to create a formalized model that is capable of reflecting scan processes. Effective algorithms have been devised to prevent simultaneous scanning of conflicting tasks and to synchronize scanners for cooperation on cut surfaces of constrained scan fields. Furthermore, we formalized aforementioned objectives and proposed a greedy scheduling strategy to solve scheduling for arbitrary Multi Laser Scanning Systems . We implemented a simulation upon the formalized model in order to reflect scan processes and validated it by comparison to real systems. The implementation has been used to evaluate a greedy scheduling strategy with various cost functions that is able to solve aforementioned objectives. An evaluation of our greedy schedule strategy showed that cost functions should be chosen according to the slice provided to achieve even utilization of scan-units and minimization of total scan time. Furthermore, the results have shown that hamilton path heuristics achieved the best solutions of proposed cost functions for jobs with many distributed parts with even costs among a build platform. In contrast to that, multiple parts with high scan times should be partitioned evenly on scan-units to minimize total scan time by using the Karmar-Karp algorithm or a heuristic partitioning approach. Additionally, prioritizing parts with many conflicts can help in scheduling situations where simultaneous scanning is possible but prohibited because of material condensate.