Spacetime Studios Take Home Programmer Test

You have been tasked with adding spell casting to a multiplayer game. Using your desired design methodology, write a C++ code sample that implements a spell casting system that satisfies the following requirements, keeping in mind that the system might be expanded and requirements could change in the future:

- Players can cast different spells and can only cast one spell at a time. Multiple spells from different players can be active at the same time.
- The spell casting system only supports one kind of spell, which causes immediate damage to targets once the casting time has expired.
- Pending spells for dead players are cancelled.

Please deliver to us:

- A document detailing the design.
- C++ code for the major components of the system. This does not need to be a full running program, so please focus your efforts on the spell casting system and related classes, and don't worry about spending time on the framework and input/output. We'd recommend not spending more than a few hours on this exercise.