Vision Document: Benchmarking Scalability and Performance of S6 Node for Sigma 6 Suite

1. Introduction:
The purpose of this software project is to benchmark the scalability and performance limits of an S6 node in the Sigma 6 Suite. The project aims to develop a software solution that allows testers to configure simulation settings, instantiate radar stations and consumer clients to interact with the S6 Node API and generate reports for results from benchmark simulation.

2. Vision Statement:
Our vision is to create a software system that enables users to accurately measure and analyze the scalability and performance limits of a given S6 node in the Sigma 6 Suite. By providing the ability to configure simulation settings, instantiate radar stations and consumer clients to interact with the S6 node API and generate reports, we aim to empower system administrators and testers with the necessary tools to evaluate the system's capabilities effectively.

3. Use Cases:
1. Use Case 1: Configure Simulation Settings
    - Description: The Simulation Administrator defines the parameters for radar stations and consumer clients in order to customize the simulation.
2. Use Case 2: Define Radar Station
    - Description: The System creates a new type of a radar by parameters provided by the user to be added to the radar catalog.
3. Use Case 3: Define Consumer Client
    - Description: The System creates a new type of client by parameters provided by the user to be added to the client catalog.
4. Use Case 4: Generate Reports
    - Description: The System compares and contrasts the data generated by the radar station and the consumer client. Then it checks whether the data is valid or if any part of it is missing.
5. Use Case 5: Run Simulation
    - Description: The System loads a pre-defined simulation configuration, instantiates radar stations and consumer clients based on the loaded configuration, and enables the transmission of data from the radar stations to the S6 node and from the S6 node to the clients.

4. Key Features and Benefits:
- Scalability Evaluation: The software system provides the ability to configure the number of radar stations and consumer clients, enabling users to assess the system's scalability under varying workloads.
- Performance Measurement: By instantiating radar stations and consumer clients, the system allows for the measurement of performance metrics such as response time and data integrity.

- Reporting: The generated reports aid in analyzing and interpreting the results from the simulation. This can then be used in facilitating informed decision-making for scaling systems.
- User-Friendly Interface: The software solution incorporates a user-friendly interface, ensuring ease of use and efficient navigation for system administrators and testers.

5. Target Users:
The software project targets system administrators and testers involved in evaluating the scalability and performance limits of the S6 node in the Sigma 6 Suite. It caters to users with varying levels of technical expertise, providing a user-friendly interface.

6. Scope:
The scope of this project encompasses the development of the software system to support the use cases outlined above. It includes the implementation of the necessary functionality for configuring simulation settings, instantiating radar stations and consumer clients, and generating reports. However, the project does not involve the development of the Sigma 6 Suite itself or any modifications to the underlying S6 node.

7. Assumptions and Constraints:
- The software project assumes the availability of the Sigma 6 Suite and the S6 node for benchmarking purposes.
- Read-only access to the Sigma S6 nodes dashboard will be provided, to check system resource usage and other vital information

In conclusion, this software project aims to deliver a solution for benchmarking the scalability and performance limits of the S6 node in the Sigma 6 Suite. By addressing the identified use cases and incorporating key features and benefits, the software system will empower system administrators and testers to evaluate the system effectively and make informed decisions for optimization and improvement.