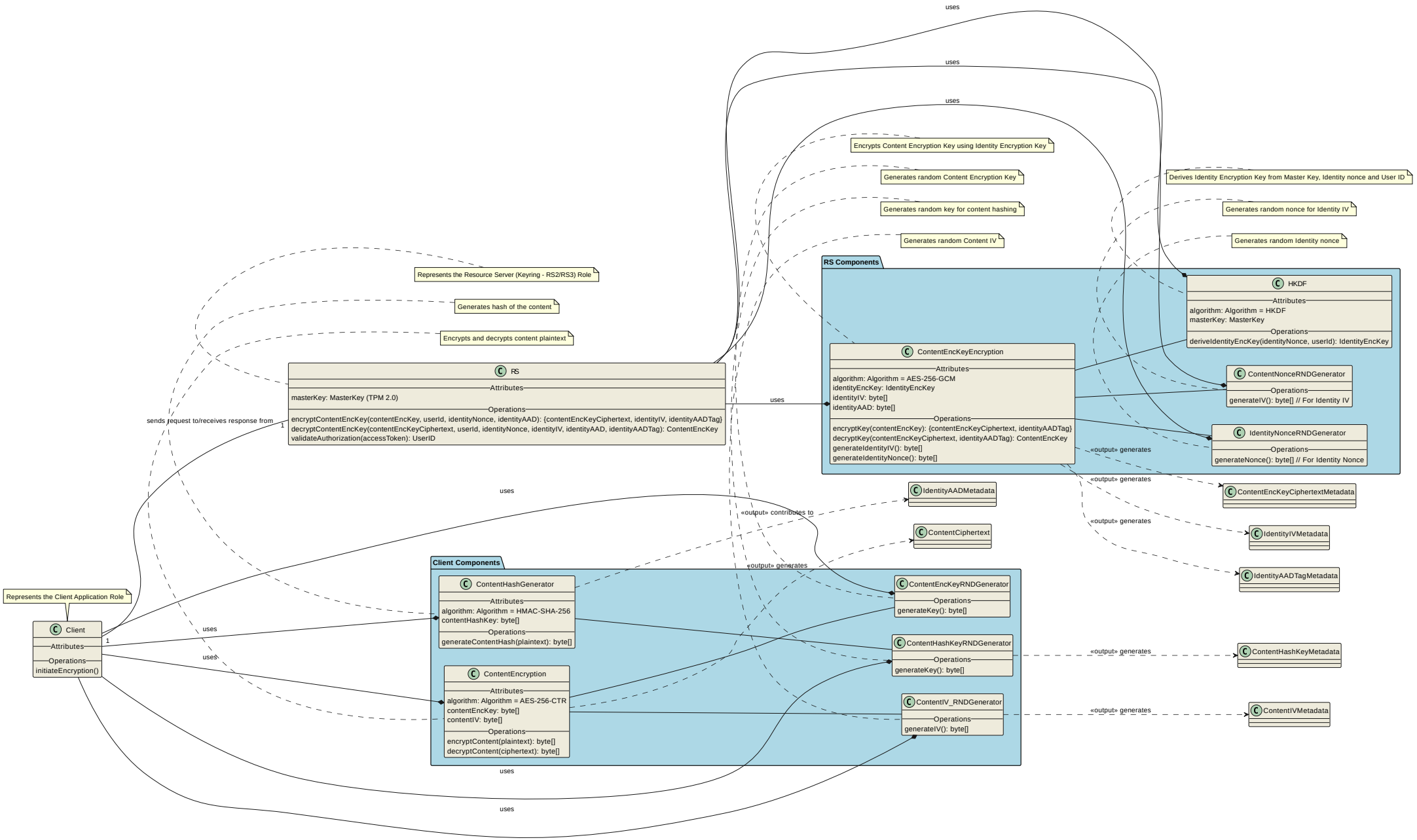
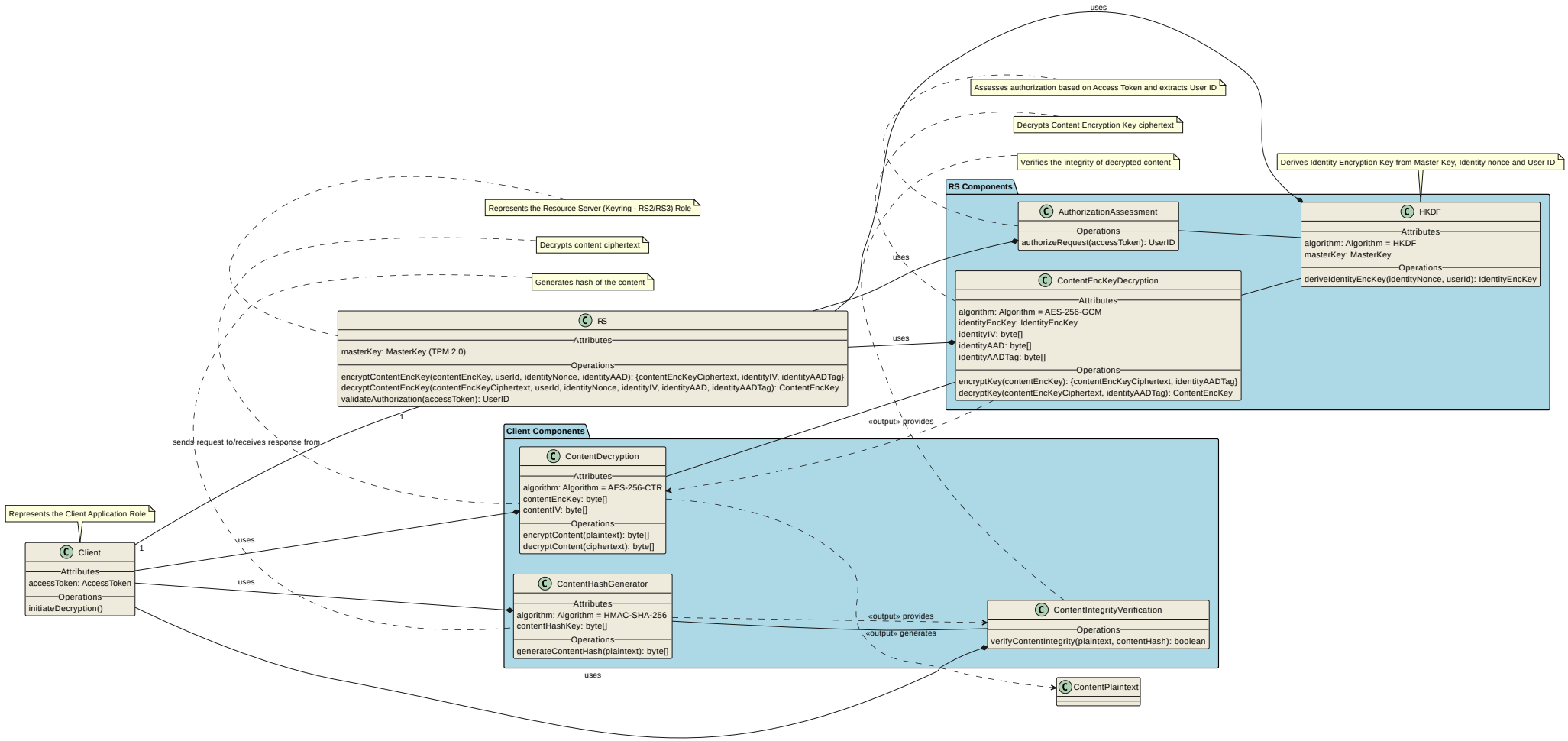
Class Diagram for Encryption Process:



Class Diagram for Decryption Process:



Explanation of the Class Diagrams and Assumptions Made:

- **Classes Represent Participants:** Each "participant" in the sequence diagrams is generally transformed into a class.
- **Packages for Client and RS Components:** I've grouped the components into "Client Components" and "RS Components" packages to visually separate client-side and server-side classes.
- **Attributes (Inferred):** I've added attributes to classes where it seemed logical based on their function. For example:
  - Encryption classes (`ContentEncryption` , `ContentEncKeyEncryption`) have `algorithm` attributes to specify the cryptographic algorithm used.
  - `HKDF` and `ContentHashGenerator` also have `algorithm` attributes.
  - `RS` class is shown with `masterKey` .
  - `Client` class in Decryption diagram has `accessToken` .
- **Operations/Methods (Inferred):** I've added operations (methods) to each class based on the actions they perform in the sequence diagrams. For example:
  - `ContentHashGenerator` has `generateContentHash()` .
  - `ContentEncryption` has `encryptContent()` and `decryptContent()` .
  - `HKDF` has `deriveIdentityEncKey()` .
  - `ContentEncKeyEncryption` has `encryptKey()` and `decryptKey()` , and methods to generate nonces/IVs.
  - `RS` class has high-level operations `encryptContentEncKey()` and `decryptContentEncKey()` to represent the overall server-side encryption and decryption processes, and `validateAuthorization()` .
- **Relationships (Inferred and Defined):**
  - **Composition/Aggregation (`-*`):** I've used composition/aggregation (`-*`) to indicate that `Client` and `RS` *use* or *contain* the component classes within their respective packages. This is a general "uses" relationship.
  - **Association/Dependency (`-->`):** I've used association/dependency (`-->`) to show relationships between components where one component uses another (e.g., `ContentHashGenerator` uses `ContentHashKeyRNDGenerator`).
  - **Output/Input (`..>` with Stereotype `<<output>>`):** I've used dashed arrows with the `<<output>>` stereotype to indicate data flow and outputs of operations, linking operations to metadata or data participants (e.g., `ContentEncryption ..> ContentCiphertext : <<output>> generates`).
  - **Client-RS Interaction (`Client "1" -- "1" RS`):** I've added a simple association between `Client` and `RS` to represent the client-server interaction, although in a more detailed diagram, this could be further refined (e.g., using interfaces or more specific associations).
- **Notes and Stereotypes:** I've added notes to describe each class and stereotypes (like `<<output>>`) to clarify the meaning of relationships.