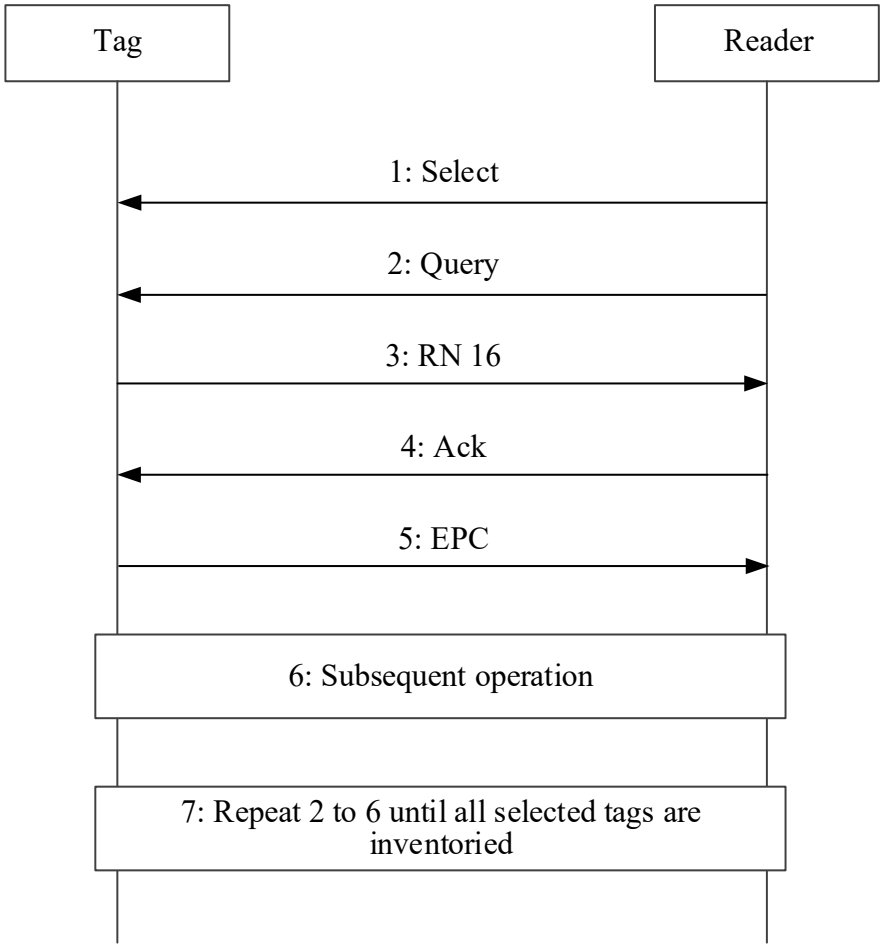
Tag
Reader
1: Select
2: Query
3: RN 16
4: Ack
5: EPC
6: Subsequent operation
7: Repeat 2 to 6 until all selected tags are inventoried

FIG. 1

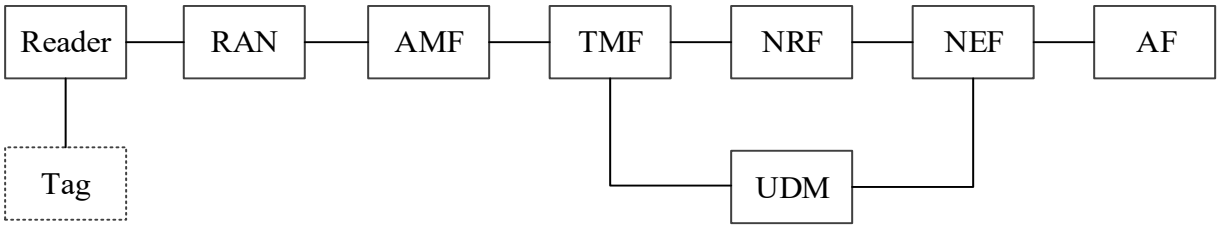
Reader
RAN
AMF
TMF
NRF
NEF
AF
Tag
UDM

FIG. 2

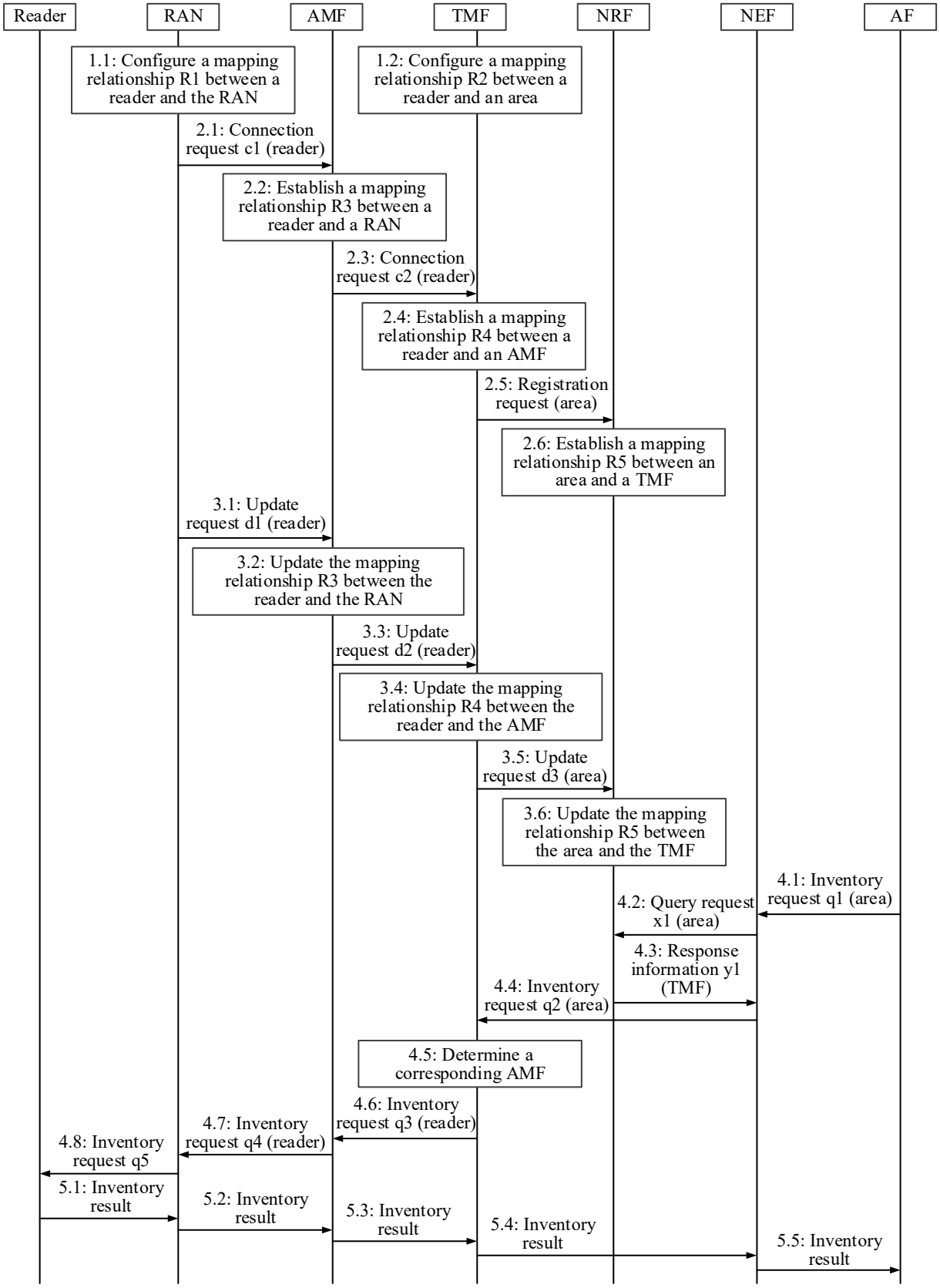
Reader
RAN
AMF
TMF
NRF
NEF
AF
1.1: Configure a mapping relationship R1 between a reader and the RAN
1.2: Configure a mapping relationship R2 between a reader and an area
2.1: Connection request c1 (reader)
2.2: Establish a mapping relationship R3 between a reader and a RAN
2.3: Connection request c2 (reader)
2.4: Establish a mapping relationship R4 between a reader and an AMF
2.5: Registration request (area)
2.6: Establish a mapping relationship R5 between an area and a TMF
3.1: Update request d1 (reader)
3.2: Update the mapping relationship R3 between the reader and the RAN
3.3: Update request d2 (reader)
3.4: Update the mapping relationship R4 between the reader and the AMF
3.5: Update request d3 (area)
3.6: Update the mapping relationship R5 between the area and the TMF
4.1: Inventory request q1 (area)
4.2: Query request x1 (area)
4.3: Response information y1 (TMF)
4.4: Inventory request q2 (area)
4.5: Determine a corresponding AMF
4.6: Inventory request q3 (reader)
4.7: Inventory request q4 (reader)
4.8: Inventory request q5
5.1: Inventory result
5.2: Inventory result
5.3: Inventory result
5.4: Inventory result
5.5: Inventory result

FIG. 3

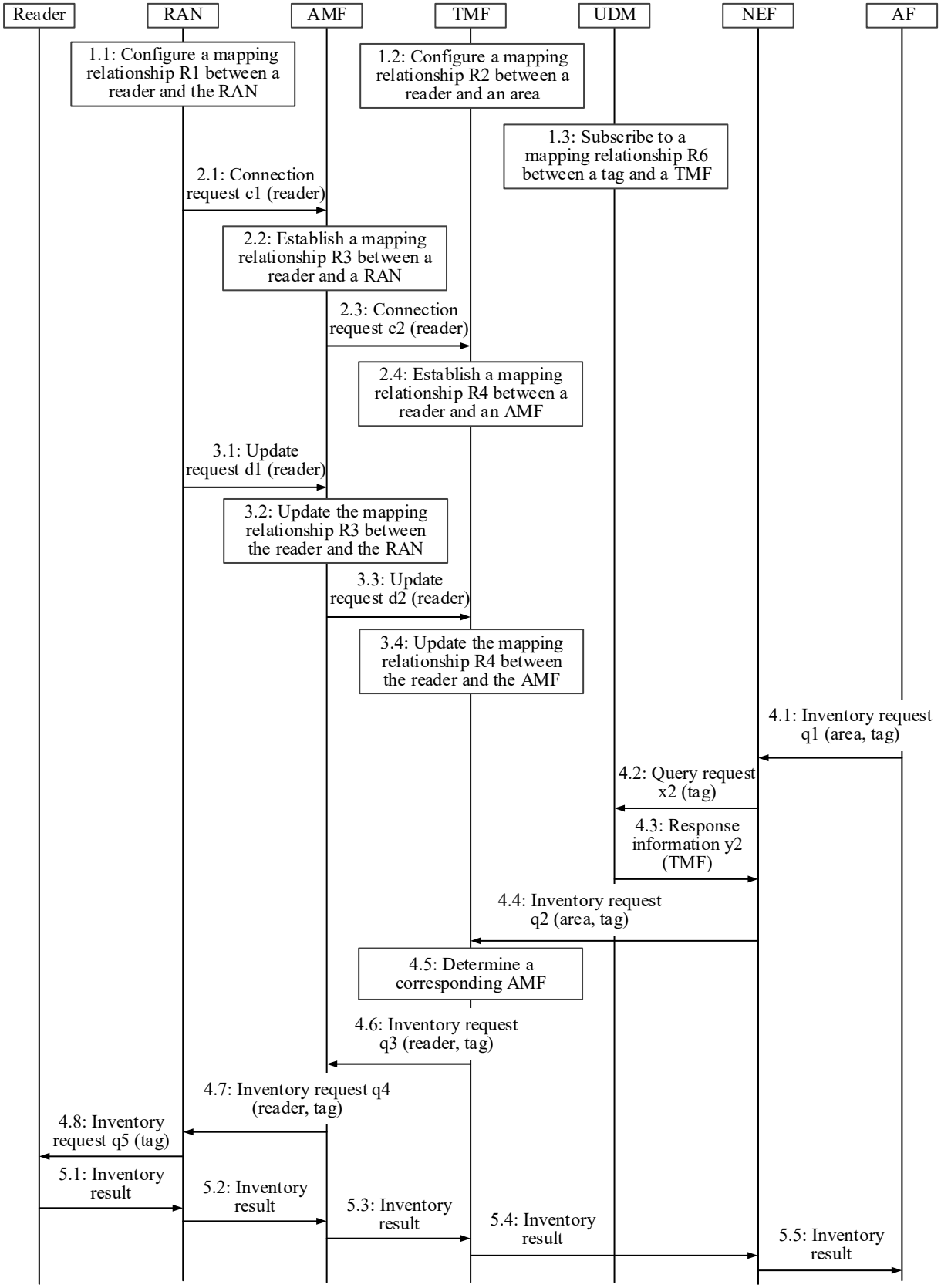
Reader
RAN
AMF
TMF
UDM
NEF
AF
1.1: Configure a mapping relationship R1 between a reader and the RAN
1.2: Configure a mapping relationship R2 between a reader and an area
1.3: Subscribe to a mapping relationship R6 between a tag and a TMF
2.1: Connection request c1 (reader)
2.2: Establish a mapping relationship R3 between a reader and a RAN
2.3: Connection request c2 (reader)
2.4: Establish a mapping relationship R4 between a reader and an AMF
3.1: Update request d1 (reader)
3.2: Update the mapping relationship R3 between the reader and the RAN
3.3: Update request d2 (reader)
3.4: Update the mapping relationship R4 between the reader and the AMF
4.1: Inventory request q1 (area, tag)
4.2: Query request x2 (tag)
4.3: Response information y2 (TMF)
4.4: Inventory request q2 (area, tag)
4.5: Determine a corresponding AMF
4.6: Inventory request q3 (reader, tag)
4.7: Inventory request q4 (reader, tag)
4.8: Inventory request q5 (tag)
5.1: Inventory result
5.2: Inventory result
5.3: Inventory result
5.4: Inventory result
5.5: Inventory result

FIG. 4

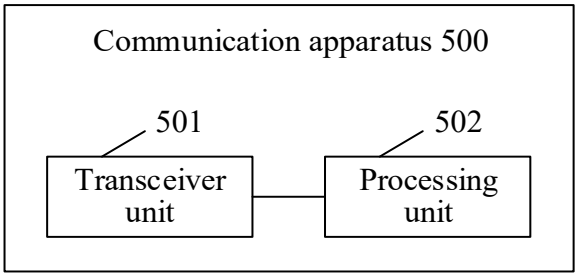

FIG. 5

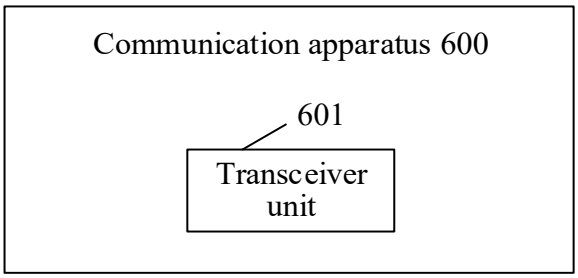

FIG. 6

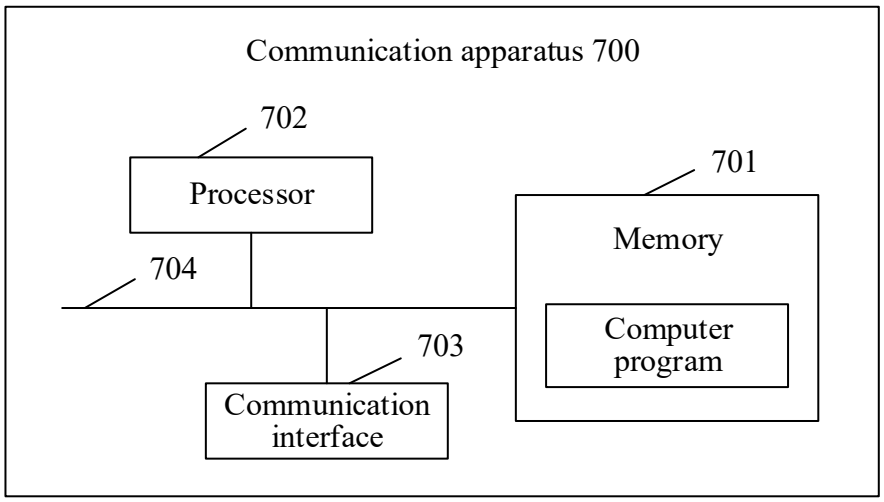

FIG. 7

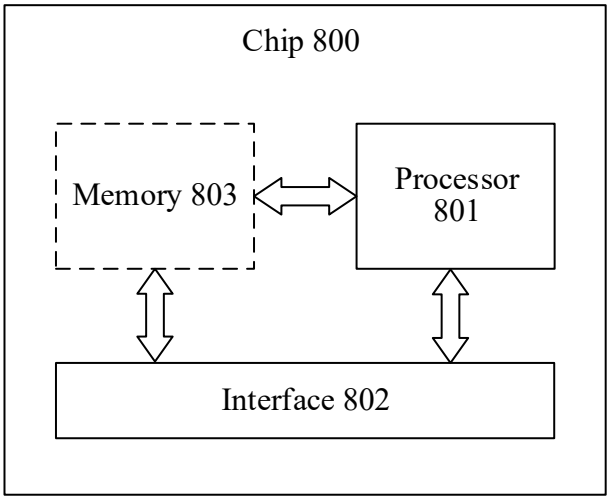

FIG. 8