Decomposition of DFD:

Label:

Cache Checker

Description:

This process determines which files already have SPDX segments in the database.

Decomposition:

```
RECEIVE Path to File from Command Line User
BEGIN LOOP
    FOREACH File in Package from Path to file
        READ Files from package_files Table using File Names (Query)
        RECEIVE Key from query
        BEGIN IF
            IF Key < 0
            THEN
                GROUP Local File into Unmatched Files
            ENDIF
        ENDIF
    END LOOP
END LOOP
BEGIN IF
    IF Unmatched Files != NULL
    THEN
        SEND Unmatched FIles to Scanner Calling Utility
    ENDIF
ENDIF
SEND Path to File to SPDX Creation
```

Label:

Scanner Calling Utility

Description:

This process takes files not found in the database and sends them to the scanning utility desired, in our case Ninki/FOSSology, in order to get file information about licenses.

Decomposition:

```
RECEIVE Unmatched Files from Cache Checker
PACKAGE Unmatched Files to Files (Tarball)
SEND Files (JSON) to Ninka/FOSSology
RECEIVE File Information from Ninka/FOSSology
SEND File Information to Cache Updater for Files
```

Label:

Cache Updater for Files

Description:

This process takes information received from the Ninka/FOSSology scan and inserts the information into the database.

Decomposition:

```
RECEIVE File Information from Scanner Calling Utility
BEGIN LOOP
    FOREACH File in File Information
        INSERT Individual File Information into package_files Table
    END LOOP
END LOOP
```

Label:

SPDX Creation

Description:

This process will be given a path to a file and will retrieve all information needed from the database in order to create an SPDX document. It will then send this to Cache Updater for SPDX to update the database with the new document.

Decomposition:

```
RECEIVE Path to File from Cache Checker
BEGIN LOOP
    FOREACH File in Package from Path to file
        READ Files from package_files Table  using File Names (Query)
        GROUP Database File into Document Information
    END LOOP
END LOOP
CREATE SPDX Document from Document Information
SEND SPDX Document to Cache Updater for SPDX
```

Label:

Cache Updater for SPDX

Description:

This process takes in an SPDX document that is created and inserts it into the database for future caching purposes as well as sending a copy to the command line use

Decomposition:

```
RECEIVE SPDX Document from SPDX Creation
INSERT SPDX Document into spdx_docs Table
SEND SPDX Document to Command Line User
```