

# PRECIS Framework Implementation

draft-nemoto-precis-framework-implement-report-00

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# Purposes of the implementation

- To evaluate whether precis framework can implement.
- To examine whether implementations based on IDNA2008 has useful features and needs modifications for precis framework implementations.
- To evaluate whether generated table's derived property value by this implementation is the same as precis framework's one.

# Implementations(1/2)

- In this document, two implementations based on precis framework are described.
  - ① Modified implementation of IDNA2008 for precis framework
    - For providing mapping SASLprepbis defined and strings validity check
  - ② To calculate precis' derived property value and to generate idnabis-tables.xml alike table based on precis framework

These implementations follow implementations of IDNA2008  
[draft-nemoto-idna2008-implementation-report-00]

# Implementations(2/2)

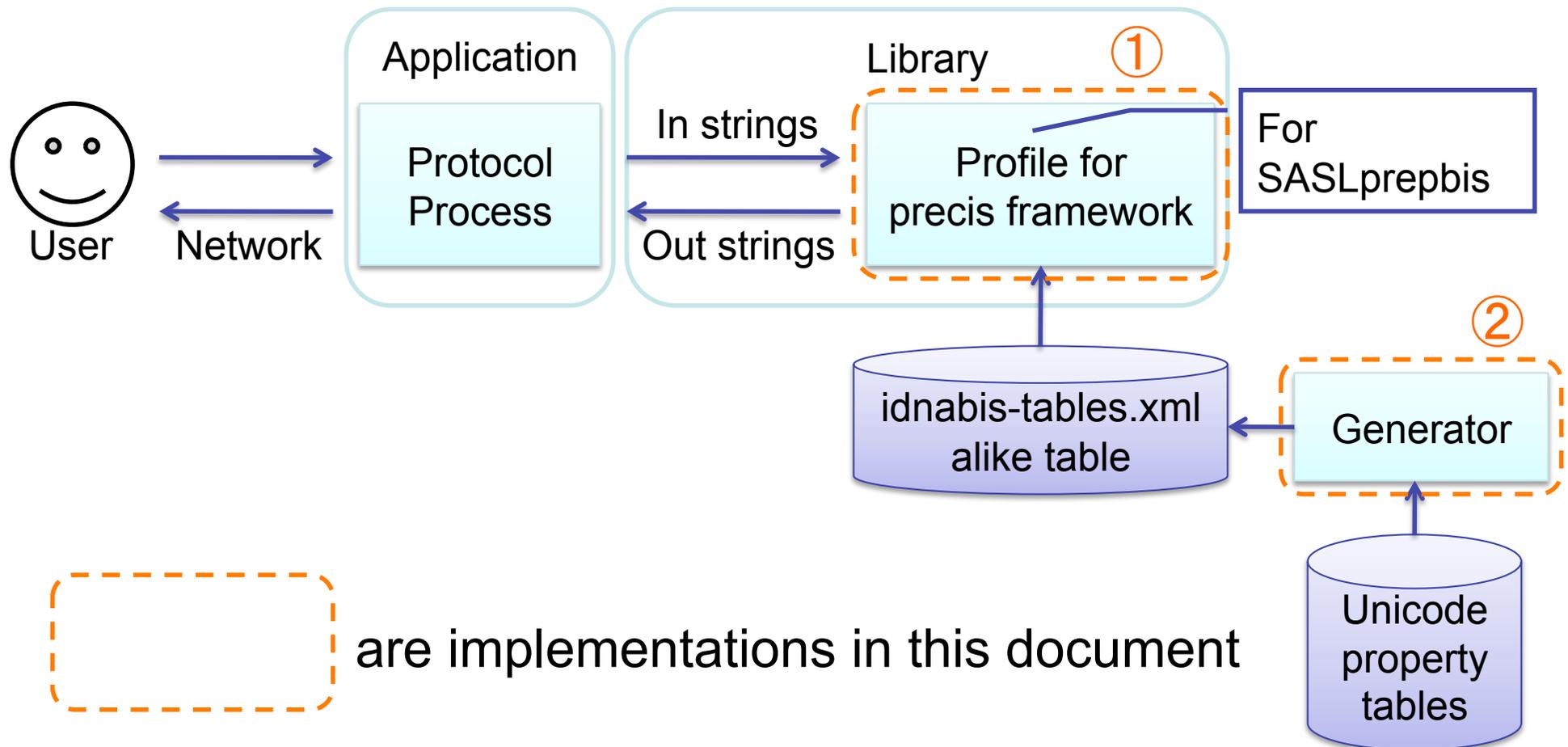


Fig. Components of implementations

# Findings(1/5)

## Feasibility

- SASLprepbis as one of precis framework's property can implement.

# Findings(2/5)

## Useful features

- Useful processes of IDNA2008 implementation for precis framework are following.
  - Some mapping features
    - Ex. Casefolding, nfc, width
  - Strings validity checking processes
    - Ex. For derived property value
    - Ex. For string length is non-zero

# Findings (3/5)

## Modifications

- Modifications to IDNA2008 implementation for precis framework are following
  - Mappings depend on each protocols defined mapping table.  
Ex. Special mapping (Map to SPACE, Map to Nothing)
  - Checking whether strings are precis NAME CLASS or FREE CLASS processes

# Findings(4/5)

## Difference of handling order

- Order of NFC and strings validity check are different in IDNA2008 and SASLprepbis
  - Does not matter for most cases
- In Hangul, some characters' derived property value is DISALLOWED before NFC, but after NFC the value is PVALID.
  - Before NFC:  
HANGUL JAMO ㅏ (1100+1161) = DISALLOWED
  - After NFC:  
HANGUL SYLLABLE ㅏ (AC00) = PVALID
- Are these different results critical??

# Findings(5/5)

## Calculation of derived property values

- Generated table's derived property value by this implementation isn't the same as precis framework's one.

Code point	Precis framework's value	Generated table's value
00BA	FREE_PVAL	PVALID
074B	PVALID	UNASSIGNED

- In these case, according to on Unicode properties files values, the generated table's values are correct.
- Precis framework's table may need to review.