



EUROPEAN CENTRAL BANK

EUROSYSTEM

# Technical introduction to the NTC solutions

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# Main points of attention stemming from CR TIPS-0041

- The NTC traffic should not collide with regular instant payment traffic:
  - Different suffix at network protocol layer
  - Key elements in the payload to differentiate NTC vs regular SCT-Inst
- Existing TIPS processing for instant flow should not be altered:
  - TIPS machine is highly oriented and optimized in the instant payment processing
  - The mixture of any non-instant business cases with instant traffic would result into a substantial distortion of the core functioning (e.g. extension of the timeout and keeping transactions alive for a time greater than 20 seconds), putting at risk (i) the normal functioning and (ii) the evolutionary maintenance design.

# CR TIPS-0041

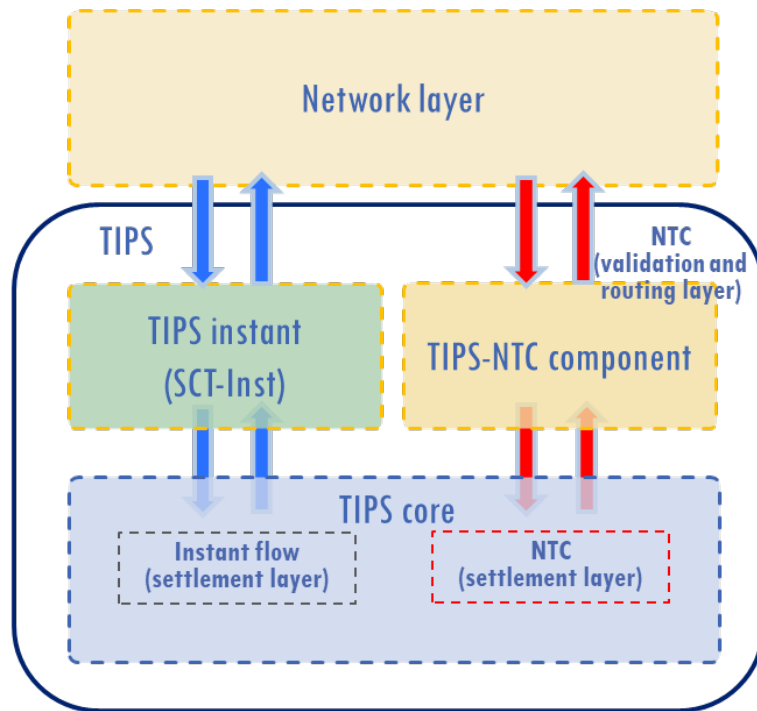
## Main requirements

- Introduction of NTC traffic in TIPS, whose lifecycle can last up to 6 hours
- Assessment of a solution with minimum impact on the concurrent instant traffic
- Possibility to cancel an NTC payment that is still pending settlement
- Inquiry mechanism for the Originator PSP to get the status of an NTC payment
- Unsolicited status update from the Beneficiary PSP to communicate intermediate status of an NTC payment (e.g. received, but not yet confirmed)

- The functional and technical solutions aim at proposing a **new component** in TIPS to take care of managing NTC in isolation from the SCT Inst traffic.
  - NTC traffic will be intercepted by this component, shielding the TIPS core until a settlement attempt can take place.
  - This new component will take care of:
    - Validating the correctness of the messages (i.e. XML format, additional technical validations)
    - Validating the message content against the reference data configuration
    - Introducing a **"validation and routing layer"** for NTC payments, managing routing of payments and reception of confirmation messages
    - Additionally, it will introduce a **"waiting list"** feature for NTC payments

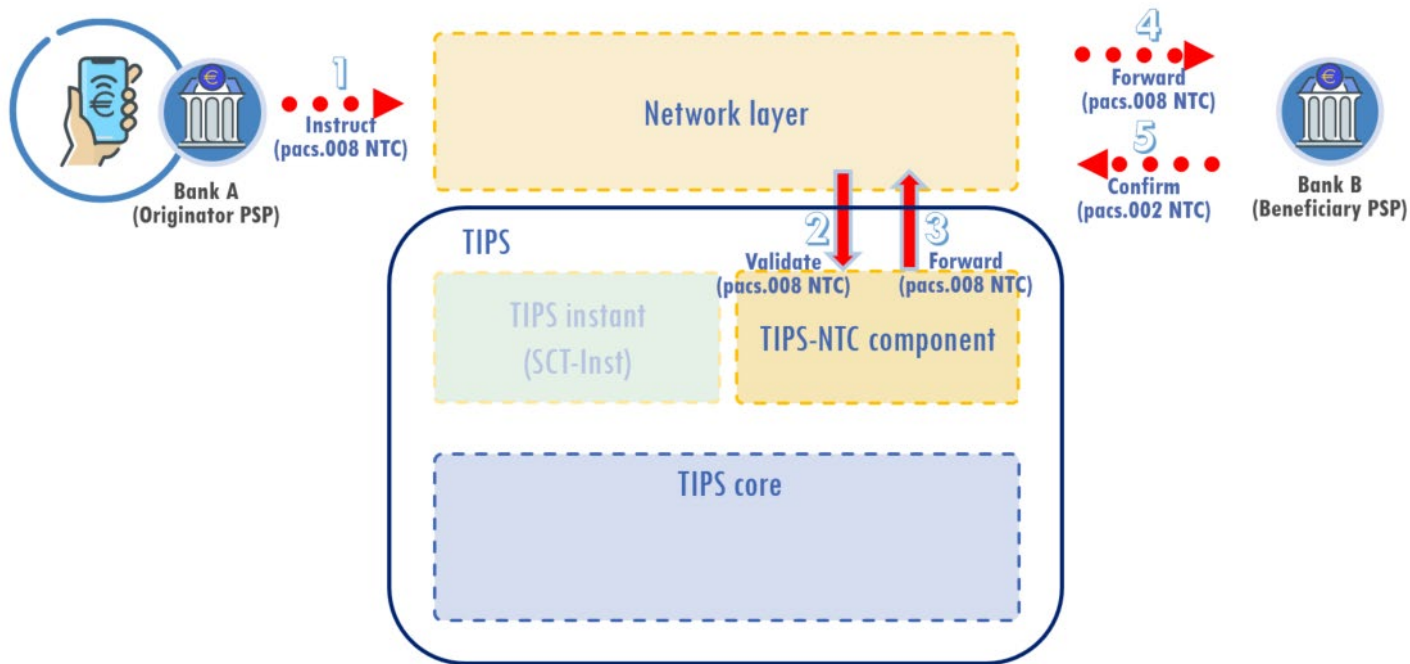
- The new component acts as **instructing party vis-à-vis the TIPS core** for the implementation of the settlement layer.
- This model can efficiently rely on asynchronous **NTC settlement attempts** without affecting neither the scheme nor potential AOS compliance.
- **Waiting list feature** is introduced to optimize the liquidity management:
  - In the proposed NTC model, **no reservation of funds** is done at any time.
  - If a payment is ready for settlement, an internal **NTC settlement attempt** takes place. Should the liquidity on the debtor account be not sufficient to cater for the full payment settlement, the NTC payment will be kept in waiting list up to 6 hours.
  - **Smart reattempt** can be introduced, e.g. when sufficient liquidity is received on the debtor account, an internal notification can reach out the new component to trigger a new NTC settlement attempt.

# NTC – High level architecture

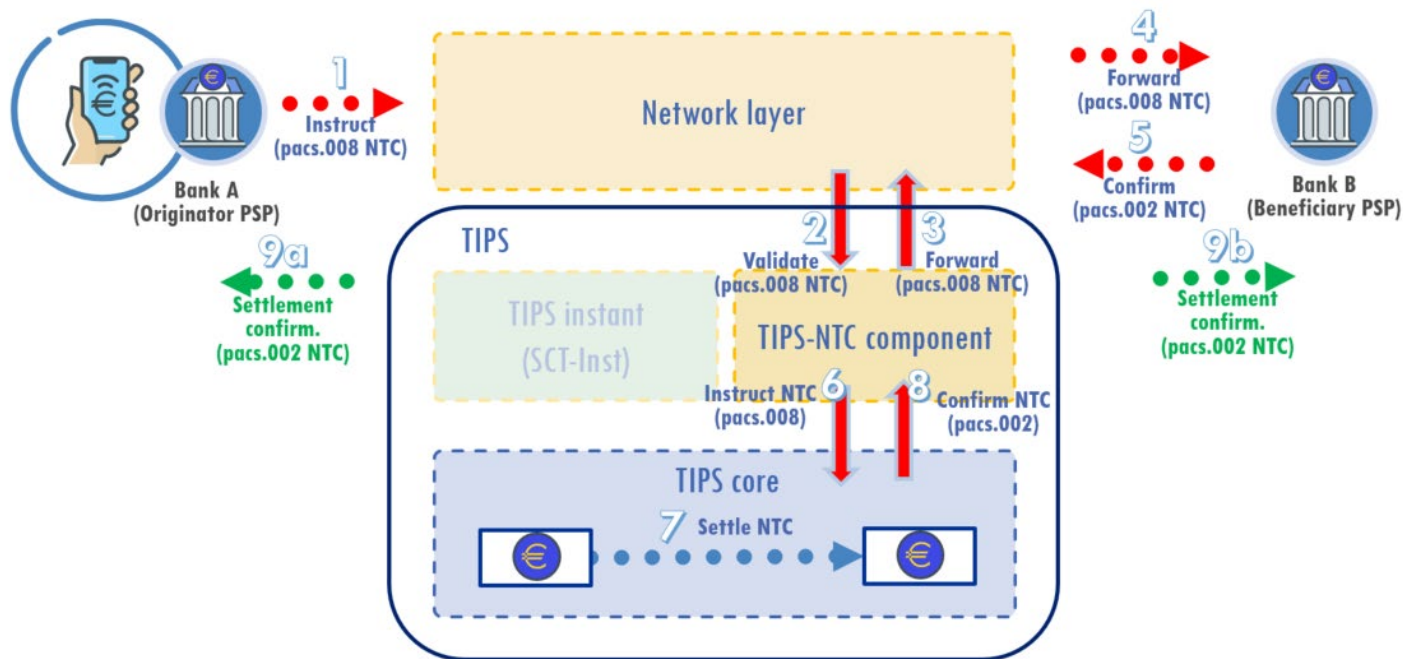


# NTC – Routing and validation layer

target|TIPS  
services



# NTC – Settlement layer





# Use cases for the TIPS-NTC component

- The following use cases will be directly managed by the new TIPS-NTC component:
  - **NTC payment cancellation**, which can occur at any time if the NTC payment has not reached a final settlement status
  - **NTC Inquiry mechanism**, to retrieve the current status of the NTC payment (e.g. pending, settled, rejected)
  - **Retry of settlement attempts**, in case of lack of funds on the debited account
  - Manage the **NTC Waiting List**
  - Provide the **NTC payment lifecycle** and **timeout management**
  - **Generate NTC confirmations** for both Originator and Beneficiary PSPs

# Functional and technical conclusions

- No segregation of liquidity and no need to implement more costly solutions (e.g. by cloning the TIPS system to manage NTC payments with a different SLA to keep the NTC traffic independent from the regular instant one).
- Existing account and BIC configurations can theoretically be used for both (i) SCT inst and (ii) NTC payments.
- Avoid any risk of endangering the current TIPS architecture since the instant and NTC traffic will technically be independent from the real instant traffic.
- Reduce impact on liquidity management by optimizing the settlement attempts through the waiting list function. Therefore no (i) long lasting reservations or (ii) peaks of reserved liquidity stemming from bulks.
- The limitation of the concurrent number of pending NTC payments, identified during the Preliminary Assessment of TIPS-0041, can be avoided.