CPR0002783 - Analysis Details - NTTD

Trace Long-Term Unavailable Products - FR Adaptation

CPR ID	CPR0002783	**Created Date**	31.10.2025
Project Type	Change Request	**Release Train**	Q4-2025
Author	Haythem Ben Abdelaziz (NTTDATA)	**Status**	In Analysis
GxP Relevant	No	**Priority**	High (Incident Response)

1. Executive Summary

This document details the technical analysis and implementation plan for **CPR0002783**. The primary objective is to adapt the automated logic for handling "Long-Term Unavailable Products," currently active in Germany (DE), for the French market (FR).

This Change Request (CR) is a direct response to a major incident that occurred on **01.07.2025**, where unavailable products were incorrectly promised to customers in France. By implementing this logic, products identified as unavailable for an extended period will be automatically excluded from subsequent delivery positions in the `cscservice` application, ensuring inventory accuracy and customer satisfaction.

Key Stakeholders:

- **Requestor:** Claus Merkl
- **BAM:** Jurij Doppler
- **Incident Expert:** Björn Bischof
- **Implementation:** NTT DATA Team (Haythem Ben Abdelaziz)

2. Business Context

2.1 Current Situation & Problem Statement

Currently, the logic to automatically mark products as "Long-Term Unavailable" and exclude them from delivery promises is active and stable for Germany. However, for France, this logic is either missing or not fully adapted to local constraints. This gap allows the system to attempt reservations or promises for items that have been out of stock for significant durations, leading to:

- Failed deliveries.
- Inaccurate stock visibility for customers.
- Operational incidents, such as the major event on 01.07.2025.

2.2 Adaptation Requirements (DE vs FR)

The core mechanism exists in the `cscservice` backend but requires specific configuration and criteria adaptation for France.

Feature / Criteria	Germany (DE) - Current	France (FR) - Target
Activation Status	Active	To be Activated
Trigger Criteria	Automatic based on stock levels < Min Threshold for X days	**Need Definition:** Thresholds and duration must be defined with FR business (Claus Merkl / Björn Bischof).
Exclusion Scope	All delivery positions	All delivery positions (Subject to FR regulations).
Re-availability Logic	Auto-reset upon Goods Receipt (GR)	Auto-reset upon Goods Receipt (GR) + Manual Override capability.

> **Note:** Specific quantitative criteria (number of days unavailable, exact stock threshold) for France are pending final confirmation from Björn Bischof.

3. Process Flow

3.1 Current Process (FR - As Is)

1. Order received via `cscservice` / MSV3.
2. System checks current stock (ATP - Available to Promise).
3. If stock is 0, system may still attempt to source or backorder, even if the product has been unavailable for months.

4. Customer receives a potential delivery date that cannot be met.
5. Incident occurs when picking fails.

3.2 Target Process (FR - To Be)

1. **Background Job:** A daily scheduled job (Database or Batch) scans the Article Master.
2. **Identification:** Products meeting the "Long-Term Unavailable" criteria (e.g., Stock = 0 for > 30 days) are flagged in the `LT_UNAVAILABLE` table.
3. **Order Entry:** `cscservice` receives an order.
4. **Validation:** Before ATP check, `cscservice` checks the `LT_UNAVAILABLE` table.
5. **Decision:**
   - If found: Immediate rejection code sent (e.g., "Definitively Unavailable"). No backorder created.
   - If not found: Standard ATP check proceeds.

3.3 Integration Points

- **Input:** Article Master Data (Stock History).
- **Processing:** `cscservice` (Outbound Logic).
- **Output:** Order Response (MSV3/proprietary protocols).

4. Data Model & Database Tables

The solution relies on expanding the usage of the existing exclusion tables to the French entity (Mandator/Country Code 'FR').

4.1 Table: ART_UNAVAILABLE_LT (Conceptual Name)

This table stores the list of products currently deemed unavailable for the long term.

Field Name	Data Type	Key	Description
`MANDATOR_ID`	NUMBER(3)	PK	Country/Entity ID (e.g., 250 for FR).
`ARTICLE_ID`	VARCHAR2(10)	PK	Unique Product Identifier (PZN/CIP).

Field Name	Data Type	Key	Description
`VALID_FROM`	DATE		Date when unavailability started.
`REASON_CODE`	VARCHAR2(5)		Reason for exclusion (e.g., 'MAN' for Manufacturer, 'REG' for Regulatory).
`IS_ACTIVE`	CHAR(1)		Flag (Y/N) to enable/disable exclusion without deleting the record.
`CREATED_BY`	VARCHAR2(20)		System job name or user ID.

4.2 Configuration Table: COUNTRY_RULES

New entries required for France to define parameters.

```
        INSERT INTO CONFIG_RULES (COUNTRY, RULE_NAME, VALUE_INT, DESCRIPTION) VALUES
('FR', 'LT_UNAVAIL_DAYS_THRESHOLD',
        30, 'Days of 0 stock before LT flag');
```

5. Frontend (Windows/Citrix)

The impact on the frontend Application Engine (AE) is minimal but critical for user visibility.

5.1 Changes Required

- **Article Detail View (AE):** Add a visual indicator (e.g., a Red Flag or specific status icon) for items listed in the `ART_UNAVAILABLE_LT` table.
- **Order Entry Screen:** When a user manually enters an article ID that is long-term unavailable, a blocking popup or warning message must appear immediately.

5.2 Error Messaging

- **Message ID:** `ERR_FR_LT_UNAVAIL`
- **Text (FR):** *"Article indisponible longue durée - commande impossible."*

6. Backend (AIX / cscservice)

The core logic resides in the `cscservice` package. The implementation involves modifying the C++ source code to include France in the exclusion logic check.

6.1 Architecture

- **Package:** `pharmos.outbound.csc_core_applications`
- **Service:** `cscservice` (running on ports 56121/56123 for FR Test).
- **Path:** `/software/wss/fr/ksc/bin/cscservice`

6.2 Code Modifications

File: `csc_deli/order_check.cpp` (Hypothetical path based on repo structure)

The logic likely contains a country switch statement. We need to add case 'FR' to the exclusion check.

```
        // Pseudo-code for required change bool isProductAvailable(Article art,
Country cnt) { if (cnt == DE || cnt ==
        FR) { // Added FR if (checkLongTermUnavailabilityTable(art.id, cnt)) { return
false; // Block order } } return
        checkATP(art); }
```

6.3 Configuration Files

- **cscservice.ini:** Verify if feature flags exist for `LT_Check_Active` and set to 1 for FR sections.

7. Technical Implementation Approach

7.1 Development Phases

- **Phase 1: Analysis (Current):** Review DE code, confirm FR rules with Business.
- **Phase 2: Database Update:** Create necessary configuration entries for FR.
- **Phase 3: Backend Dev:** Modify `cscservice` C++ code in branch `CPR0002783`.
- **Phase 4: Frontend Dev:** Update AE displays for FR context.
- **Phase 5: Unit Testing:** Verify blocking logic using mocked data.

7.2 Testing Strategy

- **Test Data:** Identify 5 test articles. Manually insert them into the `ART_UNAVAILABLE_LT` table for FR.
- **Test Case 1 (Order):** Place order via MSV3 for these articles. Expect Rejection.
- **Test Case 2 (Clean Article):** Place order for normal article. Expect Confirmation.
- **Test Case 3 (Boundary):** Verify logic behaves correctly if table is empty.

8. Dependent Department Inputs

- **PINT:** No specific changes expected unless the rejection code mapping needs updating in the interface.
- **Citrix Infrastructure:** Standard deployment of new AE binaries.
- **Env Schedule/Batch: Critical.** A new SQL job or shell script must be scheduled for FR to populate the unavailable items table daily.
- **GxP:** Assessed as Non-GxP relevant. No validation documentation required.

9. Risk Assessment & Mitigation

> **Technical Risk: High**
> Incorrect criteria configuration could block sellable stock.
> *Mitigation:* Run the population job in "Report Only" mode for 1 week before activating the blocking logic in `cscservice`.

Risk Scenario	Impact	Probability	Mitigation
Performance degradation in Order Entry	Medium	Low	Ensure DB index on `ARTICLE_ID` in exclusion table.
FR Specific Regulations ignored	High	Medium	Strict validation of business rules with Claus Merkl.
Regression in DE logic	High	Low	Automated regression testing on DE environment.

10. Success Criteria

- 100% of products flagged as "Long-Term Unavailable" are rejected at order entry.
- No impact on valid orders (false positives < 0.1%).
- System response time for order check remains under 200ms.
- Successful deployment to FR Production by Q4-2025.

11. Timeline and Milestones

- **Analysis Complete:** Nov 15, 2025
- **Development (Dev Branch):** Nov 30, 2025
- **Integration Testing (QA):** Dec 10, 2025
- **UAT (User Acceptance):** Dec 20, 2025
- **Production Rollout:** Late Dec 2025 (Release Q4)

12. Appendices

- **Repository:** `https://github.com/haythem-dev/cscload_core_discount06`
- **Branch:** `CPR0002783`
- **TFS Item:** Demand 30894

Approved By (Business)	Approved By (Technical)
Claus Merkl	Jurij Doppler