

Service Module - Detailed Sequence Diagrams

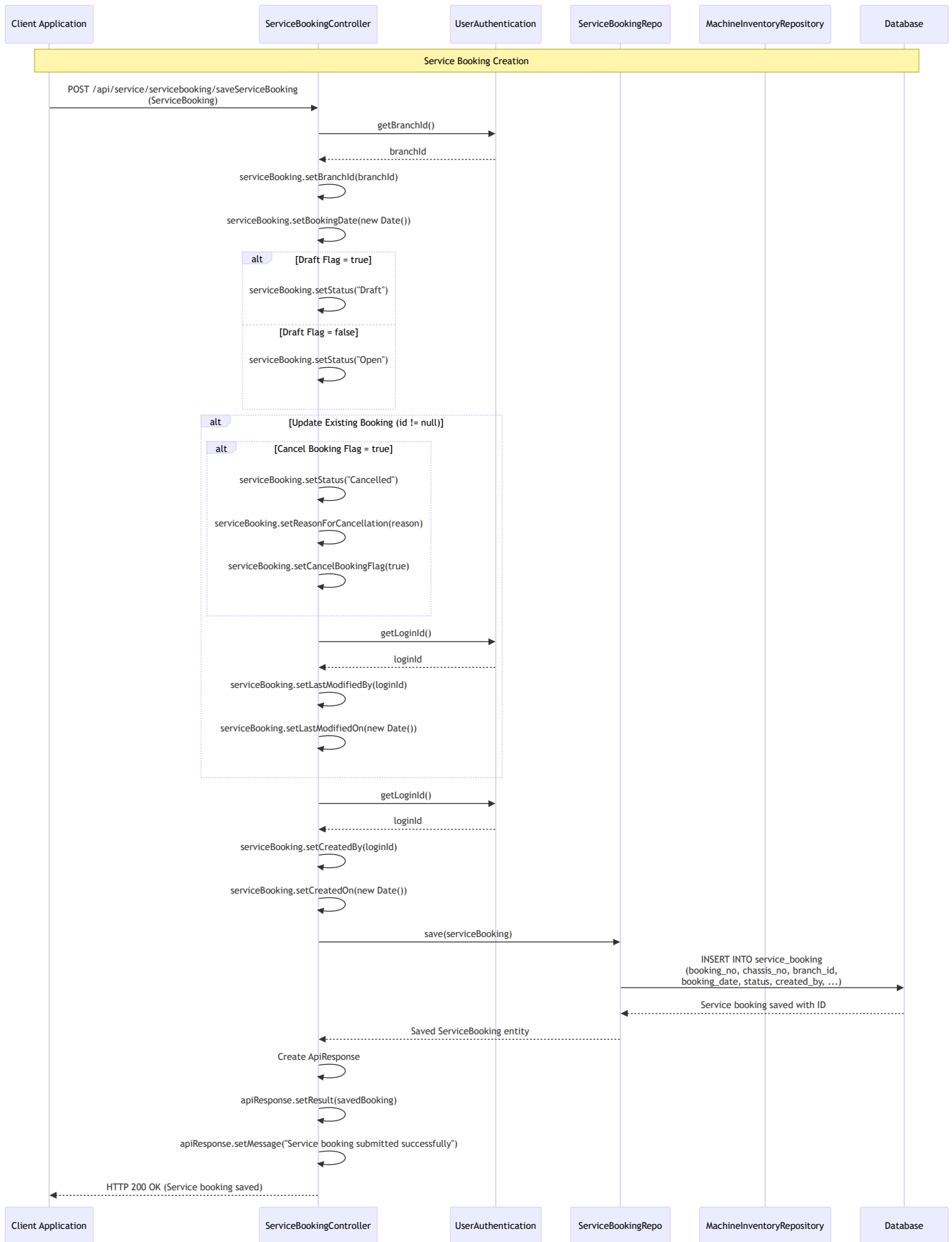
This document describes the **key technical flows** implemented in the `com.i4o.dms.kubota.service` module:

- **Service Booking** (Create, search, cancel service bookings).
- **Job Card Management** (Create, update, search, close, reopen job cards with photos and spare parts).
- **Service Claim** (Create, search, approve service claims with approval hierarchy).
- **Activity Proposal** (Create, search, approve service activity proposals).
- **Activity Claim** (Create, search, approve service activity claims with photos and vendor details).
- **Activity Report** (Create, search service activity reports with photos and PDF generation).
- **PSC/PDI/PDC** (Post-Sales Check, Pre-Delivery Inspection, Pre-Delivery Check).
- **MRC** (Machine Reconditioning with photos and invoice integration).

All diagrams use Mermaid sequence diagrams and reflect the current implementation of the Service module.

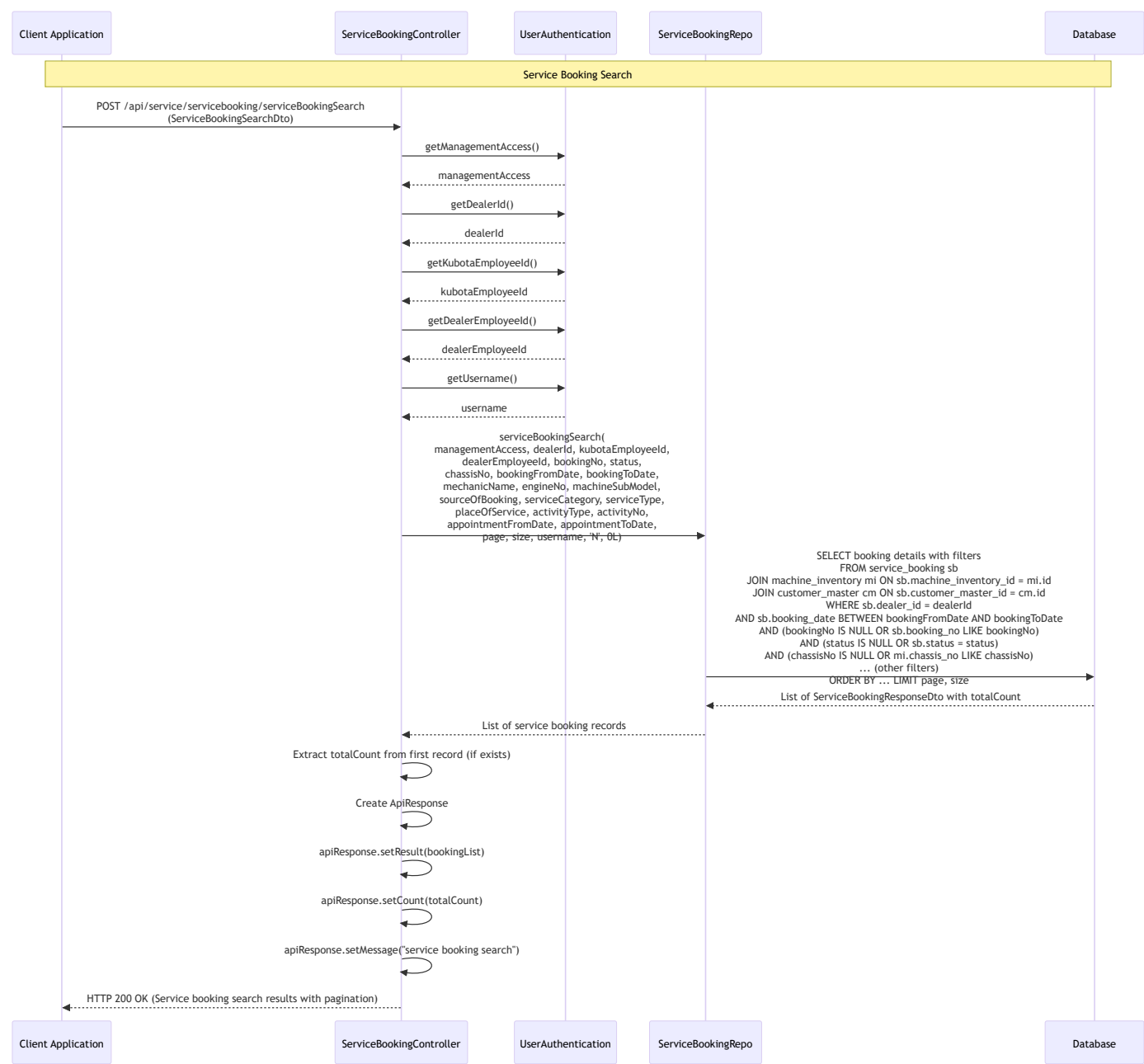
1. Service Booking Creation Flow

This flow shows how **service bookings** are created with machine details, customer information, and service requirements.



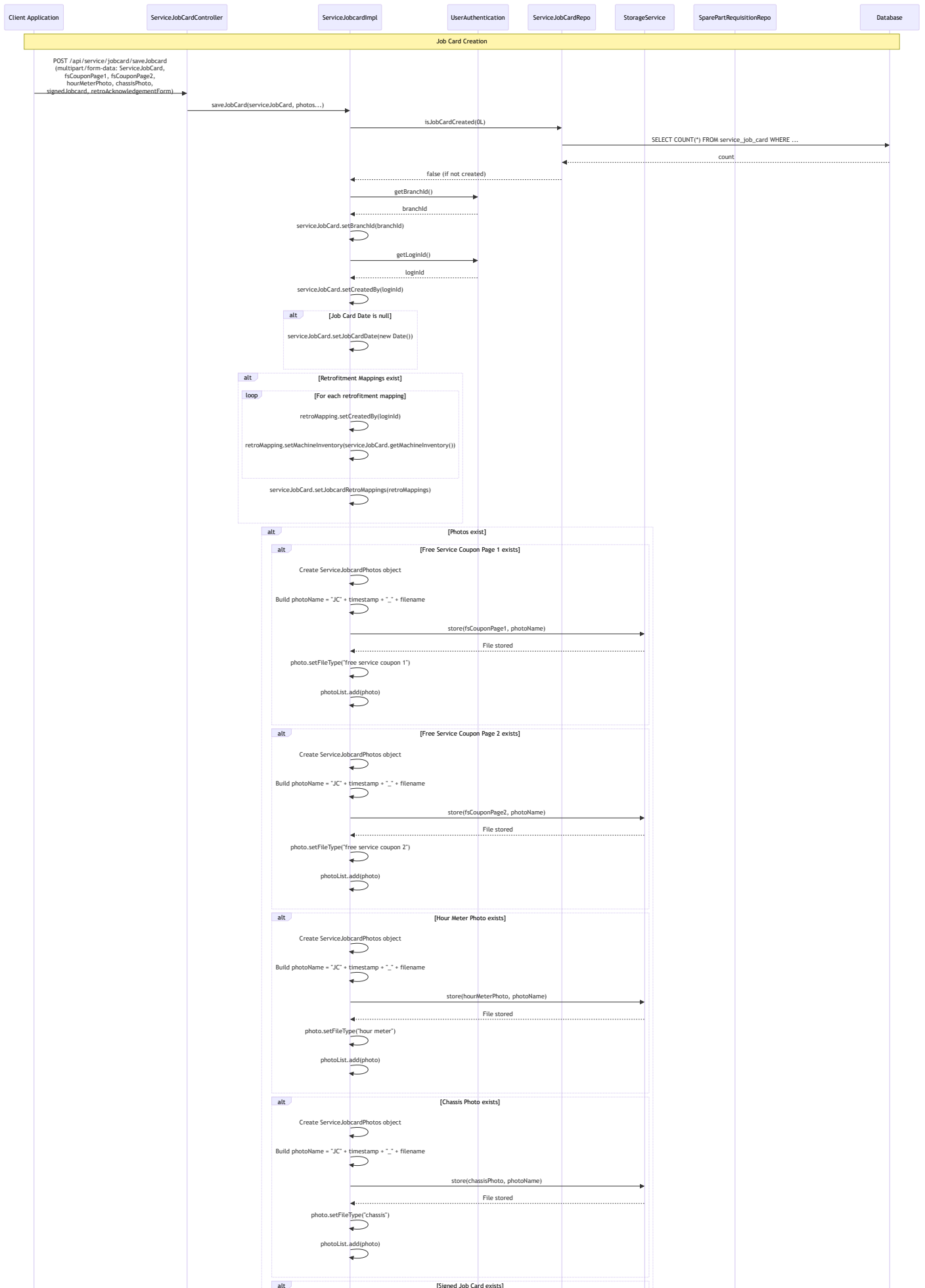
2. Service Booking Search Flow

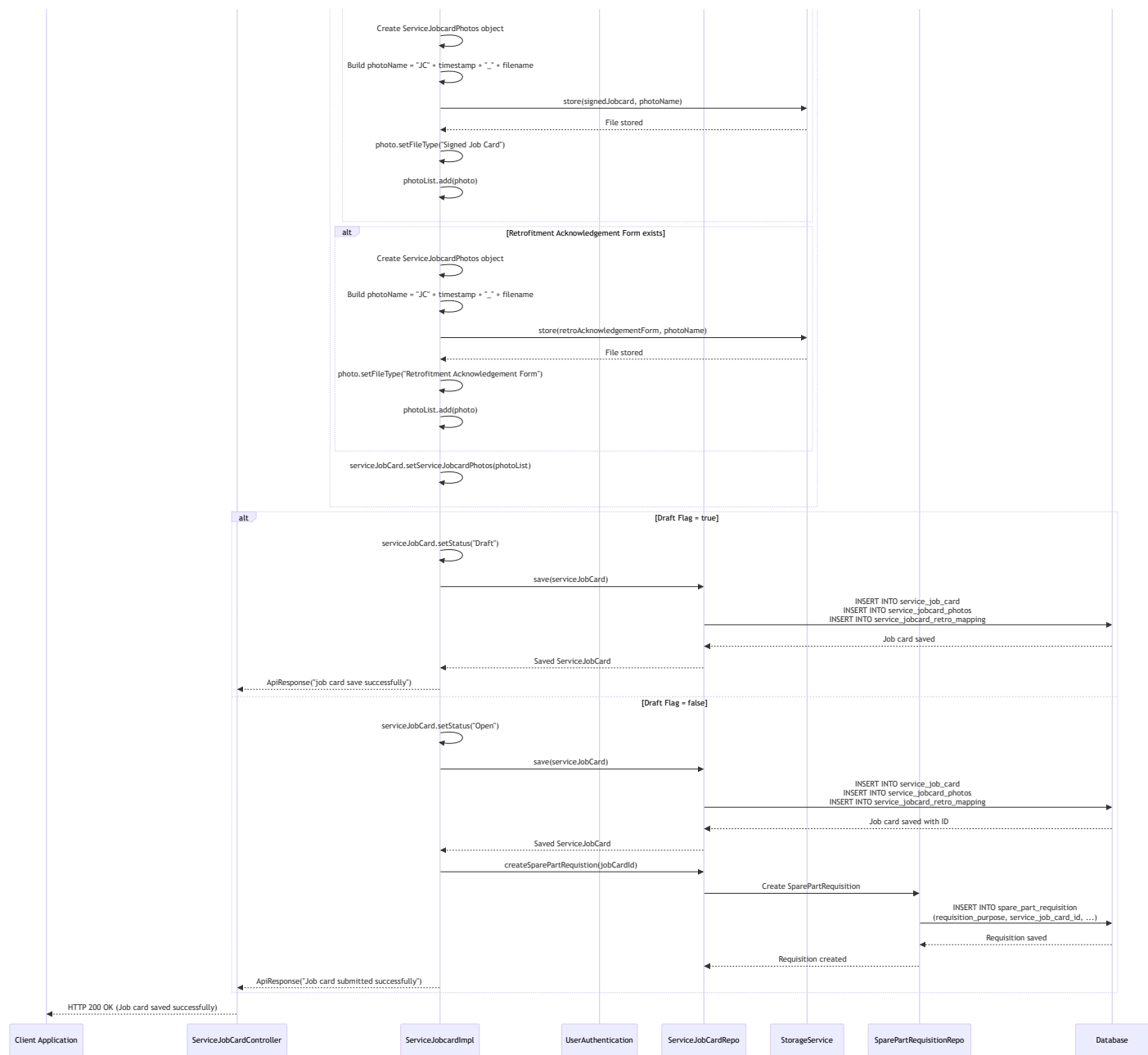
This flow shows how **service bookings** are searched with various filters including booking number, chassis number, status, date range, and service details.



3. Job Card Creation Flow

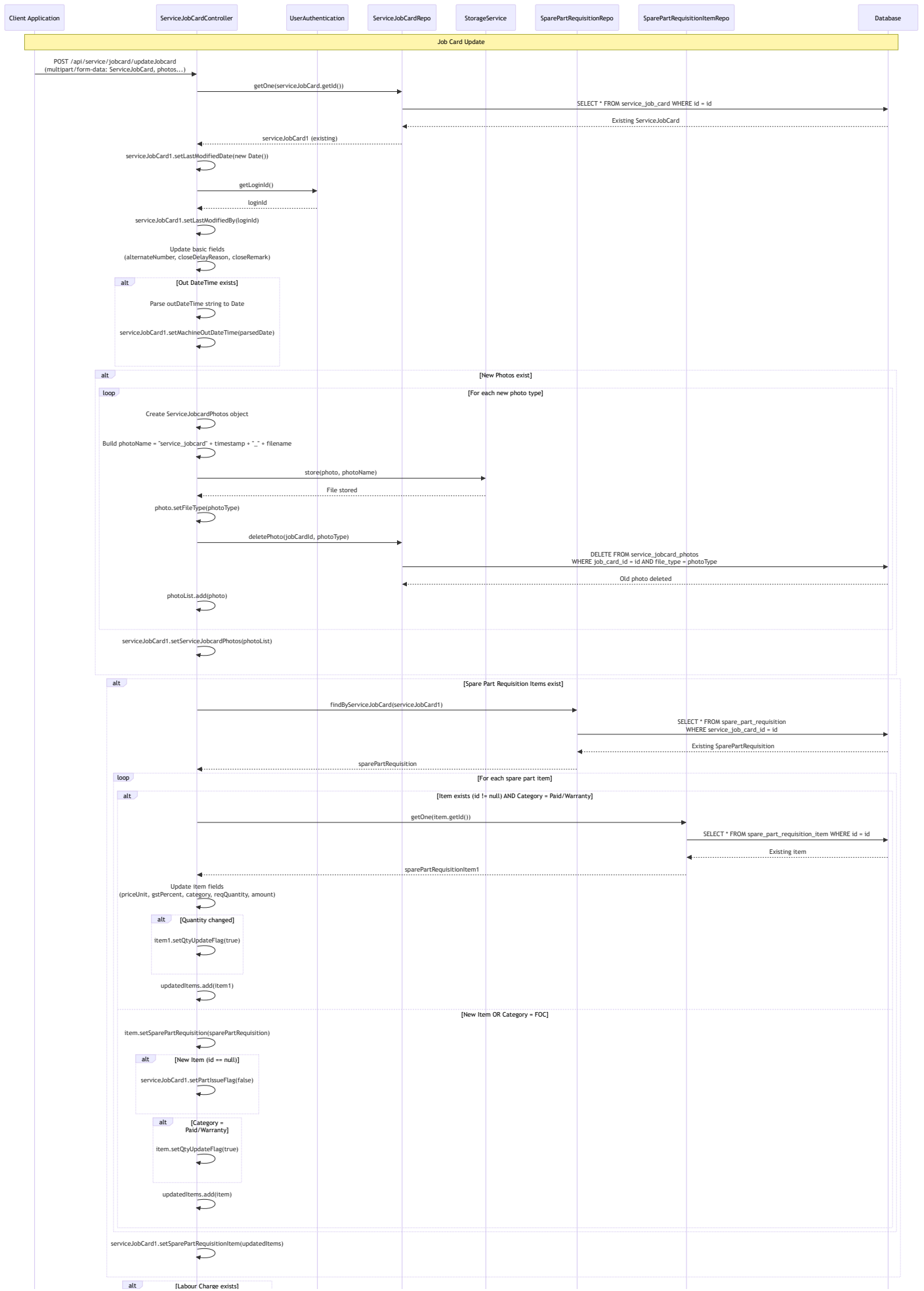
This flow shows how **job cards** are created with machine details, service information, photos, spare parts, and retrofitment mappings.

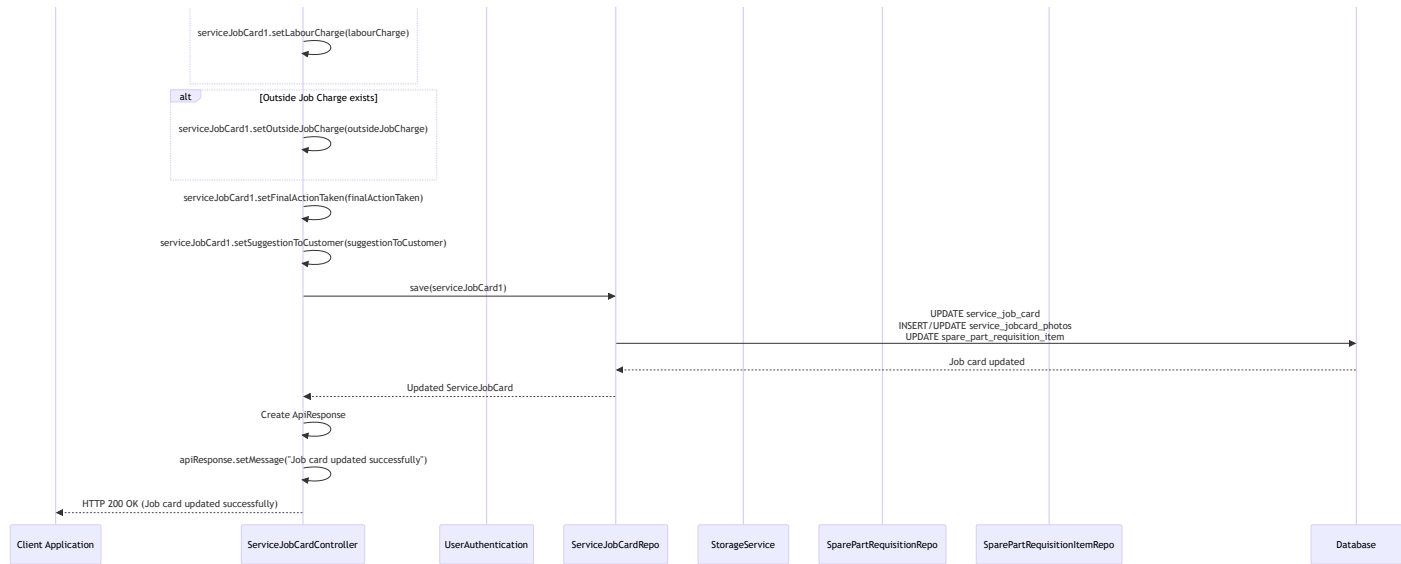




4. Job Card Update Flow

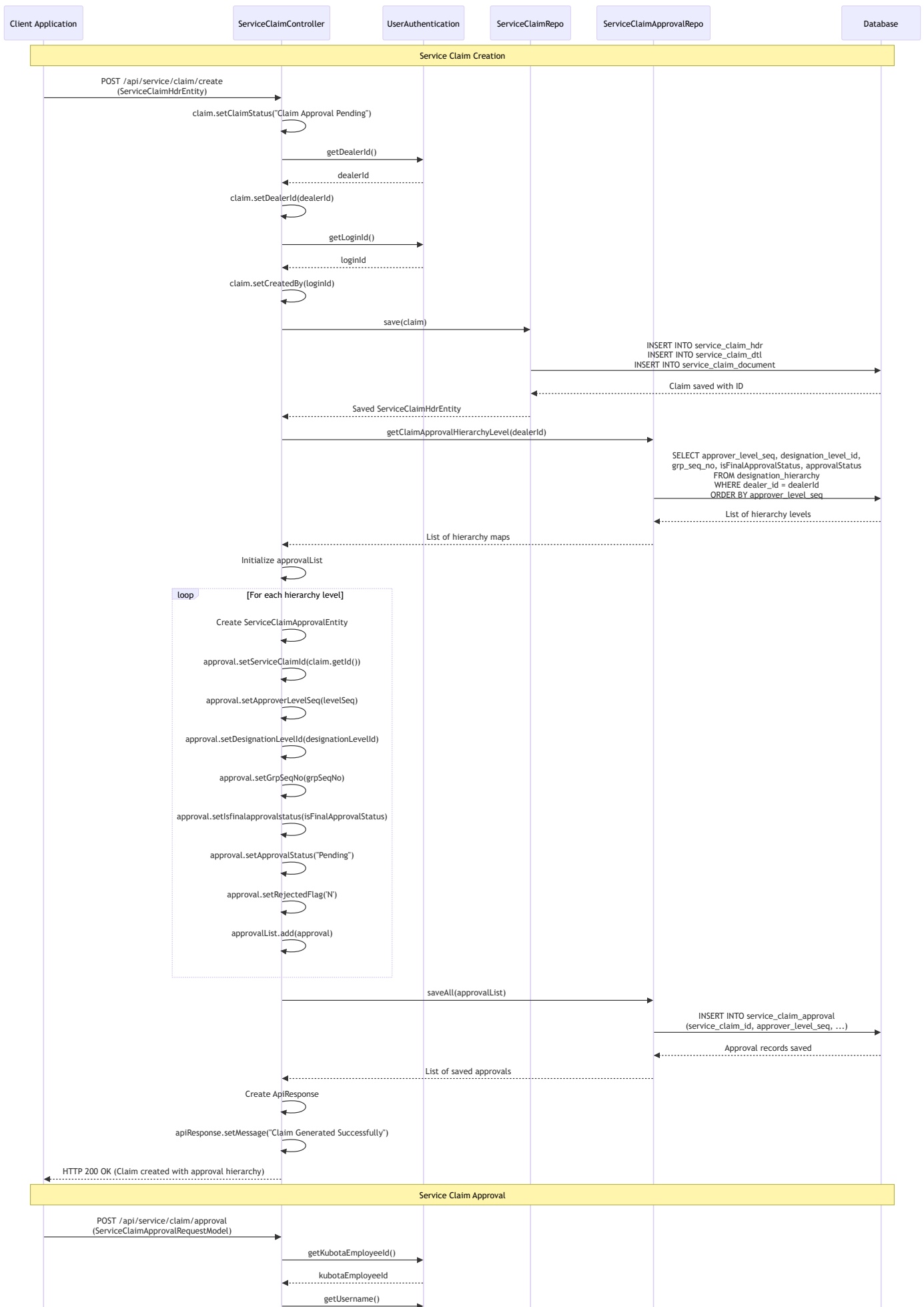
This flow shows how **job cards** are updated with new photos, spare parts, labour charges, and machine out details.

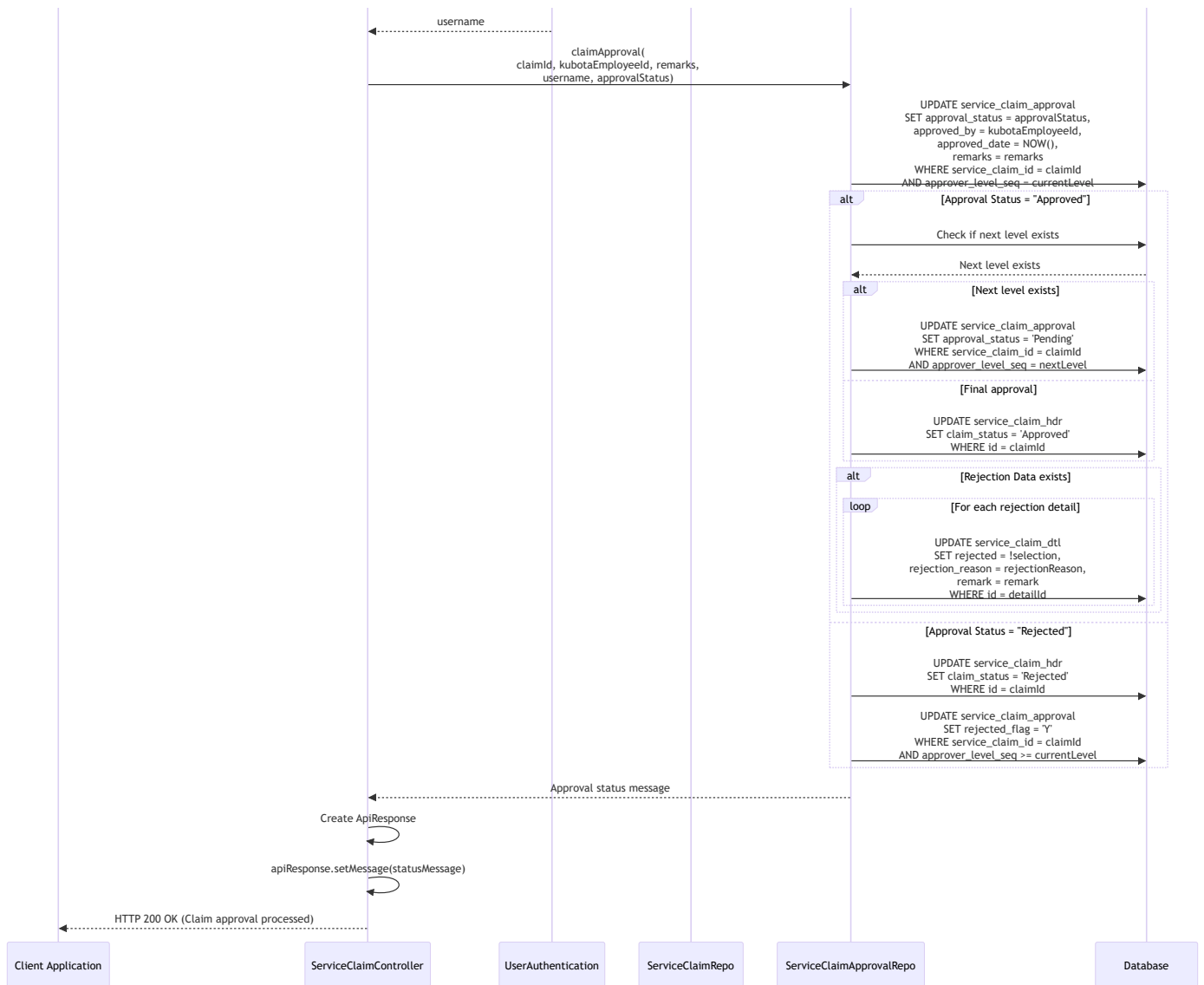




5. Service Claim Creation and Approval Flow

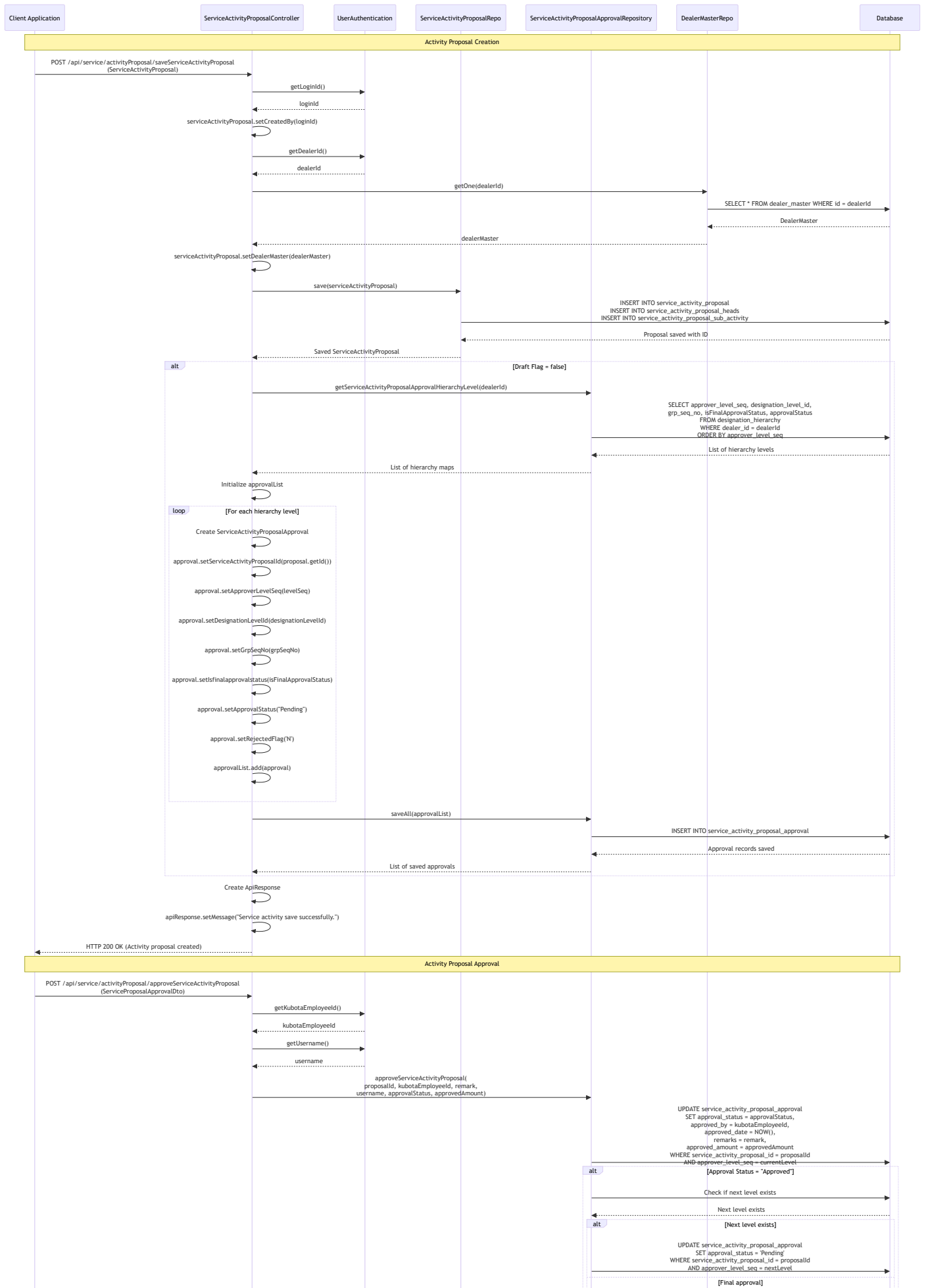
This flow shows how **service claims** are created with product/service details, documents, and approval hierarchy setup.

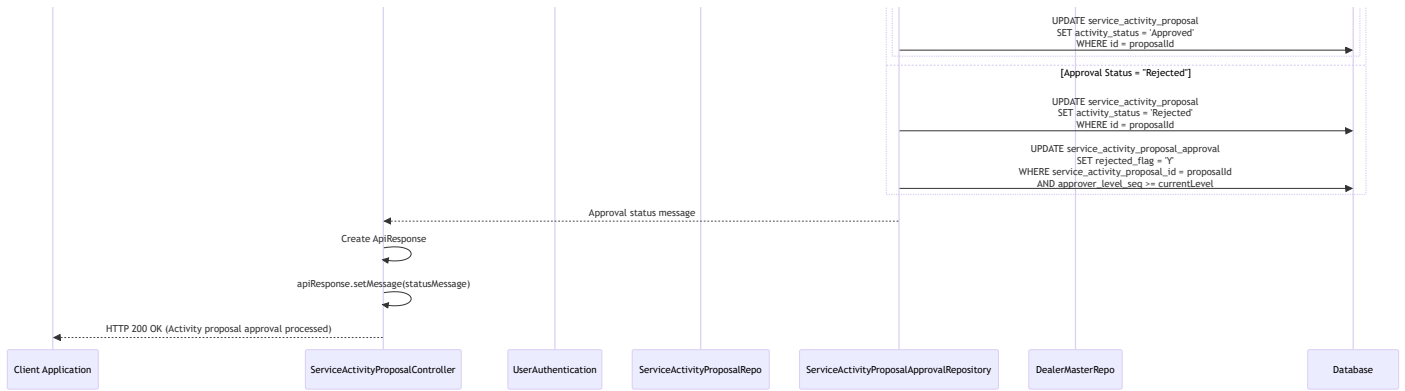




6. Activity Proposal Creation and Approval Flow

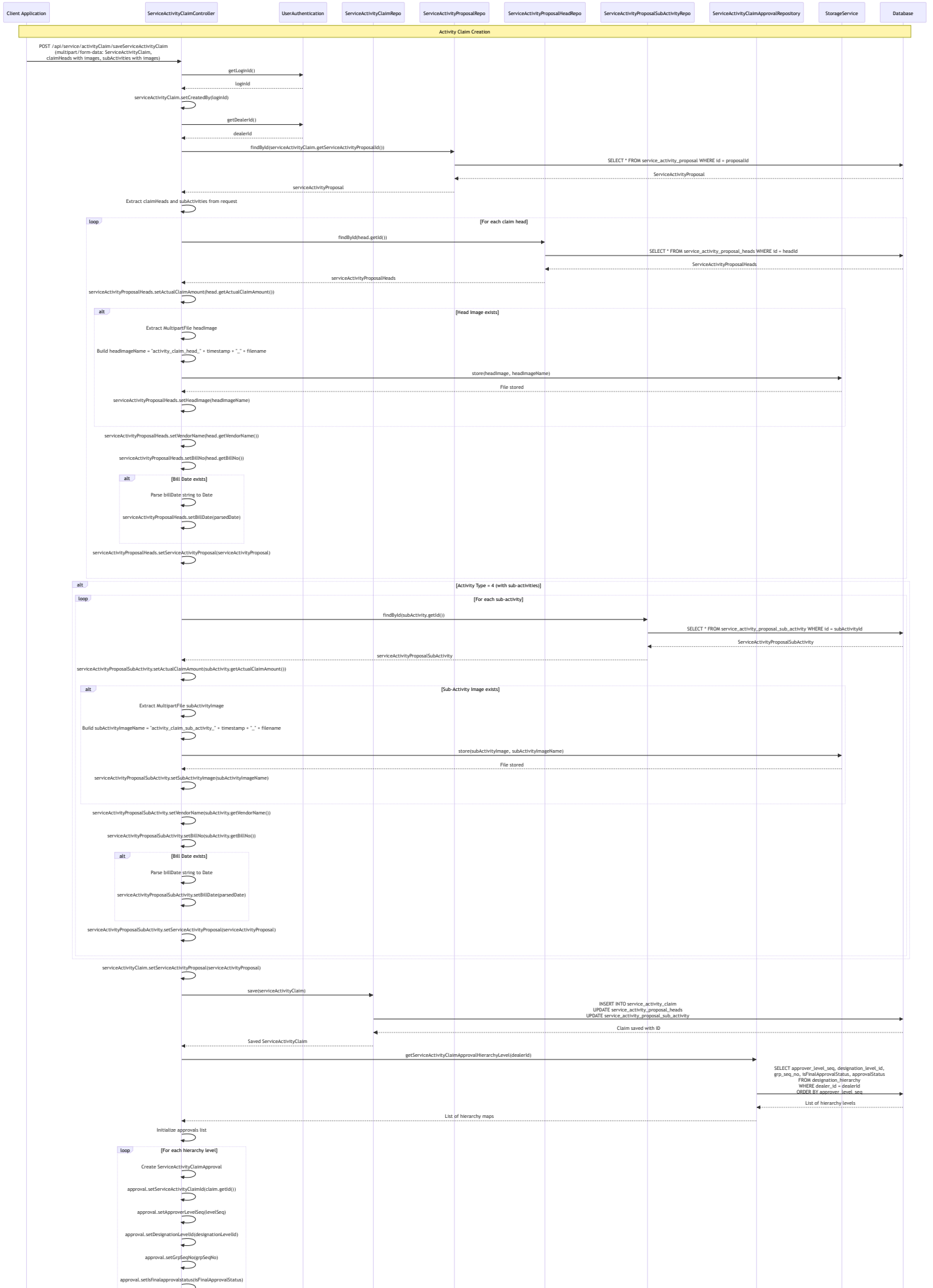
This flow shows how **service activity proposals** are created with activity details, heads, sub-activities, and approval hierarchy setup.

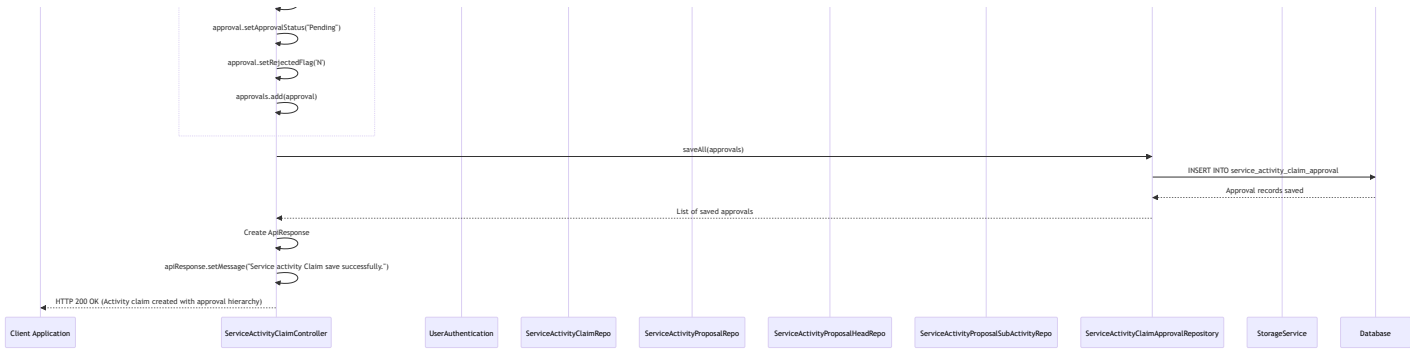




7. Activity Claim Creation Flow

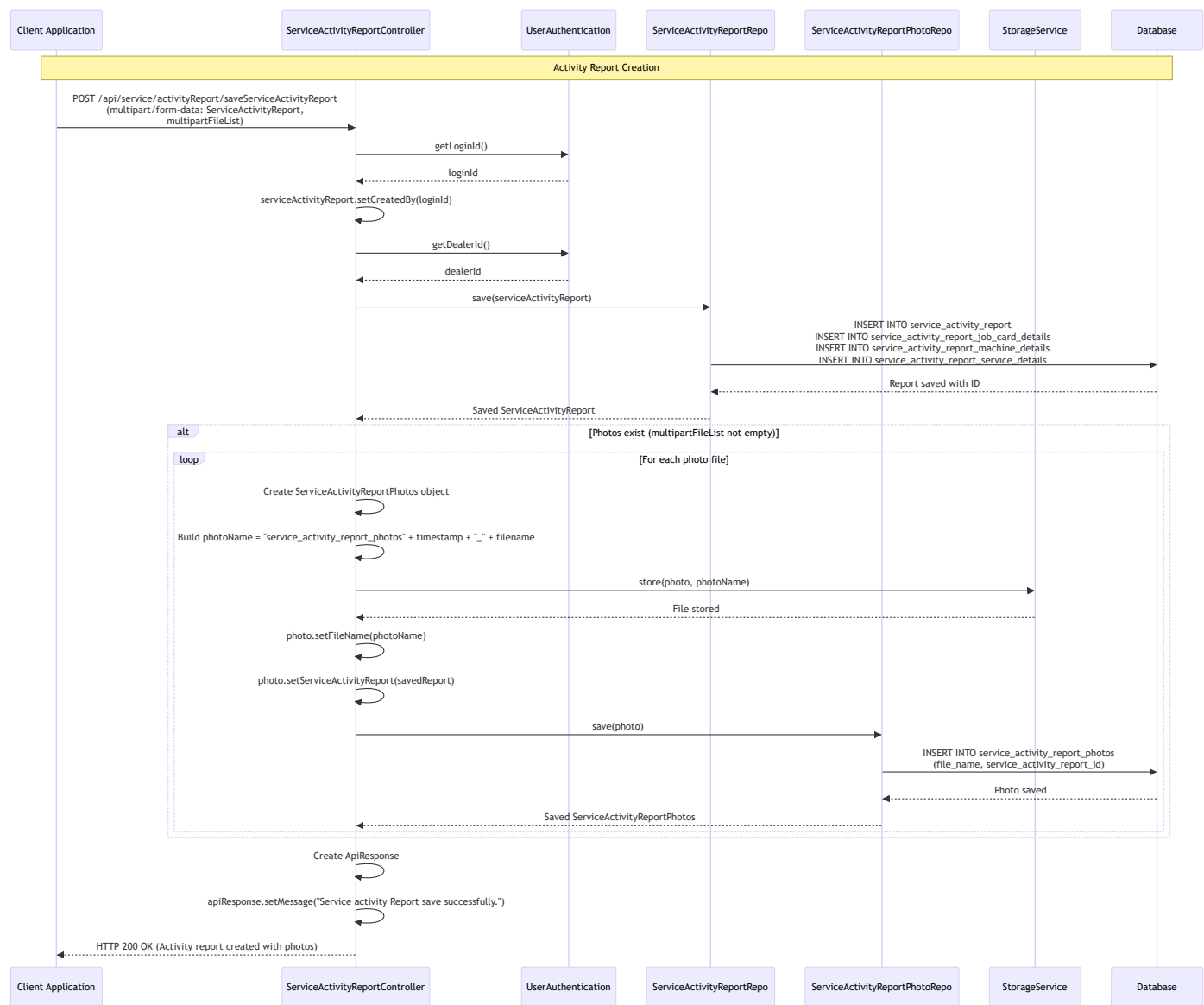
This flow shows how **service activity claims** are created with activity proposal details, heads, sub-activities, photos, and vendor information.





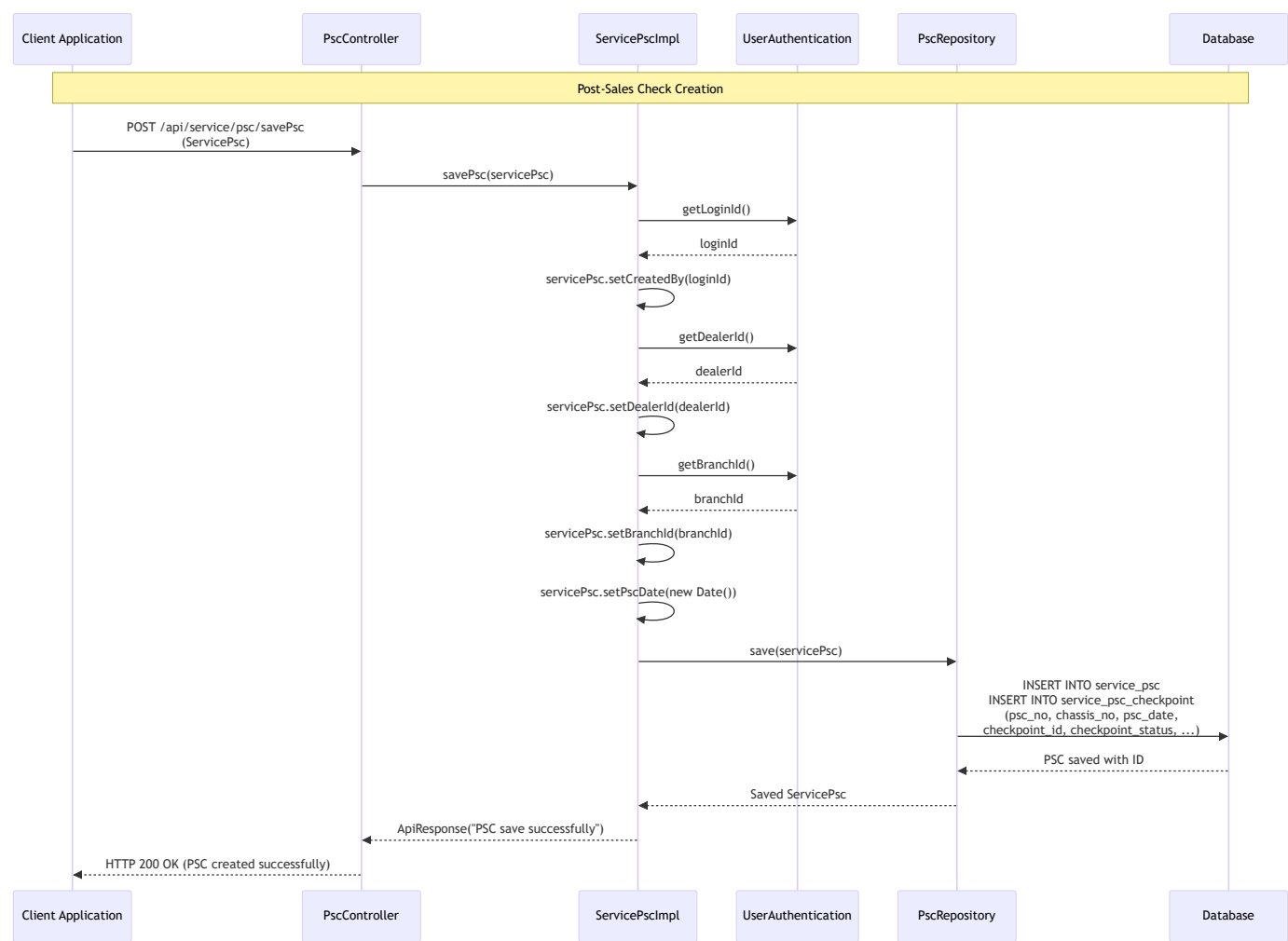
8. Activity Report Creation Flow

This flow shows how **service activity reports** are created with activity proposal details, job card details, machine details, service details, and photos.



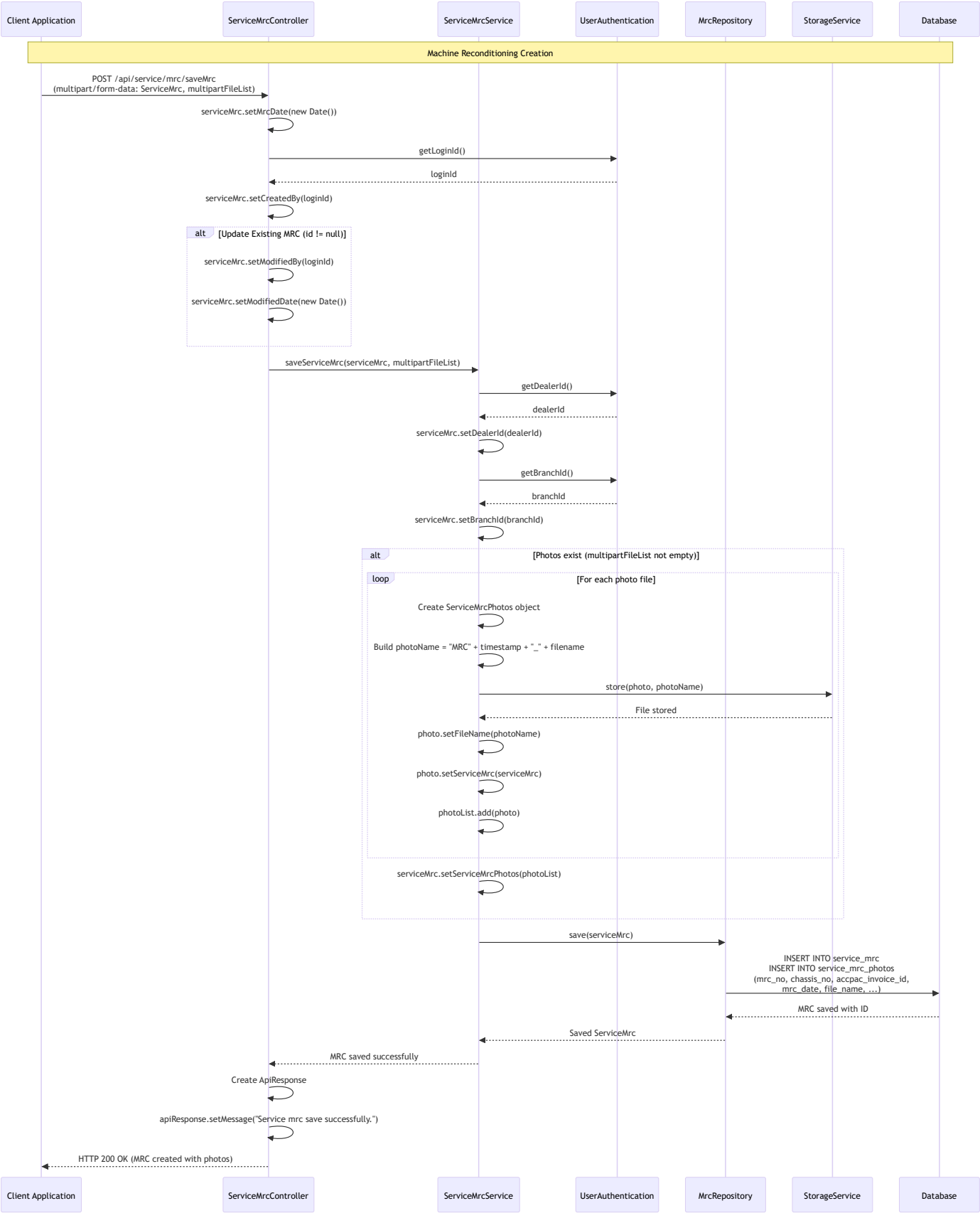
9. PSC (Post-Sales Check) Creation Flow

This flow shows how **Post-Sales Check (PSC)** records are created with chassis details and checkpoint information.



10. MRC (Machine Reconditioning) Creation Flow

This flow shows how **Machine Reconditioning (MRC)** records are created with chassis details, invoice information, and photos.



Summary

The **Service module** provides comprehensive **Service Management** functionality for the KUBOTA DMS:

- **Service Booking:**
 - Create service bookings with machine and customer details
 - Search bookings with multiple filters (booking number, chassis number, status, date range, service details)
 - Cancel service bookings with reason
 - Auto-complete chassis numbers and booking numbers
 - Support for draft and open status
- **Job Card Management:**
 - Create job cards with machine details, service information, and photos
 - Upload multiple photo types (free service coupons, hour meter, chassis, signed job card, retrofitment acknowledgement)
 - Manage spare part requisitions with categories (FOC, Paid, Warranty)
 - Update job cards with labour charges, outside job charges, and machine out details
 - Close and reopen job cards with approval workflow
 - Search job cards with extensive filters
 - Machine service history tracking
 - Excel report generation for job cards
 - Retrofitment campaign integration
- **Service Claim:**
 - Create service claims with product/service details and documents
 - Multi-level approval hierarchy setup
 - Claim search with filters (claim number, status, date range)
 - Claim approval workflow with rejection handling
 - Excel report generation (summary and detail)
 - Document approval amount tracking
- **Activity Proposal:**
 - Create service activity proposals with activity type, budget, and targets
 - Activity heads and sub-activities management
 - Budget calculation for activity types
 - Multi-level approval hierarchy
 - Activity proposal search with filters
 - Group approval support
 - Activity status tracking

- **Activity Claim:**
 - Create activity claims linked to approved proposals
 - Upload photos for heads and sub-activities
 - Vendor details and bill information (vendor name, bill number, bill date)
 - Actual claim amount tracking
 - Multi-level approval workflow
 - Head and sub-activity level approval
 - Claim search and view functionality
 - Edit capability for non-approved claims
- **Activity Report:**
 - Create activity reports with job card, machine, and service details
 - Upload multiple photos
 - Report search functionality
 - PDF report generation using Jasper Reports
 - View activity report details with all associated data
- **PSC/PDI/PDC:**
 - Post-Sales Check (PSC) with checkpoint management
 - Pre-Delivery Inspection (PDI) with inspection details
 - Pre-Delivery Check (PDC) with check details
 - Chassis number auto-complete
 - Search functionality for all check types
- **MRC (Machine Reconditioning):**
 - Create MRC records with chassis and invoice details
 - Photo upload support
 - Integration with ACCPAC invoices
 - MRC search with filters
 - View MRC details with photos
- **Machine Installation/Reinstallation:**
 - Machine installation tracking
 - Machine reinstallation tracking
 - Installation details and status management

The Service module integrates with multiple other modules (Sales, Spares, Warranty, Masters) to provide a unified service management system, enabling dealers to efficiently manage service bookings, job cards, claims, activities, and machine maintenance operations.