Case Management Architecture Implementation

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1. Current State Analysis

Existing Case Entity

Field	Type	Current Values	Status
`number`	int	Auto-increment	✓ Keep
`cCaseNumber`	varchar	C2812202500001 format	✓ Keep
`name`	varchar	Case subject	✓ Keep
`status`	enum	New, Assigned, Pending, Closed, Rejected, Duplicate	⚠ Modify
`priority`	enum	Low, Normal, High, Urgent	✓ Keep
`type`	enum	Question, Incident, Problem	⚠ Modify
`description`	text	Case details	✓ Keep
`contactId`	link	Customer link	✓ Keep (displays as "Customer")
`assignedUserId`	link	Assigned officer	✓ Keep
`resolution`	text	Resolution notes	✓ Keep

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2. Field Requirements

2.1 New Custom Fields to Create

Navigate to: **Administration → Entity Manager → Case → Fields → Add Field**

Field 1: Customer Type

```
None
Field Name:     cCustomerType
Type:           Enum
Label:          Customer Type
Options:
  - Individual
  - Corporate
  - SME
  - Micro Finance
Default:        Individual
Required:       No
Audited:        Yes
```

Field 2: Product Type

```
None
Field Name:     cProductType
Type:           Enum
Label:          Product Type
Options:
  - Personal Loan
  - Vehicle Loan
  - Gold Loan
  - Home Loan
  - Business Loan
  - Leasing
  - Pawning
  - Fixed Deposit
  - Savings Account
  - Insurance
  - Not Applicable
Default:        Not Applicable
Required:       No
Audited:        Yes
```

Field 3: Branch

```
None
Field Name:     cBranch
Type:           Link
Label:          Branch
Entity to link: cBranch
Required:       No
Audited:        Yes
```

Field 4: SLA Resolution Due

```
None
Field Name:     cSlaResolutionDue
Type:           Datetime
Label:          Resolution Due Date
Required:       No
Read-only:      Yes (formula-calculated)
Audited:        No
```

Field 5: SLA Status

```
None
Field Name:     cSlaStatus
Type:           Enum
Label:          SLA Status
Options:
  - On Track
  - At Risk
  - Breached
Default:        On Track
Style:
  On Track:     success (green)
  At Risk:      warning (yellow)
  Breached:     danger (red)
Required:       No
Read-only:      Yes
```

Field 6: Escalation Level

```
None
Field Name:     cEscalationLevel
Type:           Enum
```

```
Label:          Escalation Level
Options:
  - None
  - Supervisor
  - Manager
  - Senior Management
  - Compliance
Default:        None
Required:       No
Audited:        Yes
```

Field 7: Resolution Type

```None
Field Name:     cResolutionType
Type:           Enum
Label:          Resolution Type
Options:
  - Resolved - Action Taken
  - Resolved - No Action Required
  - Resolved - Compensation Provided
  - Customer Withdrew
  - Duplicate Case
  - Invalid/Not Applicable
Required:       No (required when status = Resolved)
```

Field 8: Customer Satisfaction

```None
Field Name:     cCustomerSatisfaction
Type:           Enum
Label:          Customer Satisfaction
Options:
  - 5 - Excellent
  - 4 - Good
  - 3 - Average
  - 2 - Poor
  - 1 - Very Poor
  - Not Rated
Default:        Not Rated
Required:       No
```

Field 9: Resolved At

```
None
Field Name:     cResolvedAt
Type:           Datetime
Label:          Resolved At
Required:       No
Read-only:      Yes
```

Field 10: Source Channel

```
None
Field Name:     cSourceChannel
Type:           Enum
Label:          Source Channel
Options:
      list same values we used in lead
Default:        Phone
Required:       Yes
Audited:        Yes
```

2.2 Existing Fields to Modify

Navigate to: **Administration** → **Entity Manager** → **Case** → **Fields**

Modify: type Field

```
None
Field:          type
New Label:      Case Category
New Options:
  - Service
  - Complaint
  - Inquiry
Style:
  Service:      primary (blue)
  Complaint:    danger (red)
  Inquiry:      default (gray)
Default:        Inquiry
```

Modify: status Field

```None
Field:          status
New Options:
  - Open
  - In Progress
  - Pending Customer
  - Escalated
  - Resolved
  - Closed
Style:
  Open:             primary
  In Progress:      warning
  Pending Customer: info
  Escalated:        danger
  Resolved:         success
  Closed:           default
Default:        Open
```

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3. Layout Configuration

3.1 Detail View Layout

Navigate to: **Administration** → **Layout Manager** → **Case** → **Detail**

Panel 1: Case Information (Top Left)

```None
Row 1: name (full width)
Row 2: type | priority
Row 3: status | cSlaStatus
Row 4: contactName | cCustomerType
Row 5: cBranch | assignedUserName
Row 6: cSourceChannel | createdAt
```

Panel 2: Product & Classification (Top Right)

```None
Row 1: cProductType
```

```
Row 2: cCaseNumber
Row 3: number
```

Panel 3: Description (Full Width)

```None
Row 1: description (full width, 4 rows height)
```

Panel 4: SLA & Escalation (Side Panel)

```None
Row 1: cSlaResolutionDue
Row 2: cSlaStatus
Row 3: cEscalationLevel
```

Panel 5: Resolution (Bottom)

```None
Row 1: cResolutionType | cResolvedAt
Row 2: resolution (full width, 3 rows height)
Row 3: cCustomerSatisfaction
```

3.2 List View Layout

Navigate to: **Administration → Layout Manager → Case → List**

```None
Columns (in order):
1. cCaseNumber (width: 12%)
2. name (width: 20%)
3. contactName (width: 15%)
4. type (width: 8%)
5. priority (width: 8%)
6. status (width: 10%)
7. cSlaStatus (width: 8%)
8. cBranchName (width: 10%)
9. assignedUserName (width: 12%)
```

```
10. createdAt (width: 10%)
```

3.3 Create View Layout

Navigate to: **Administration → Layout Manager → Case → Detail Small**

```None
Required fields order:
1. name
2. type
3. priority
4. contactId (Customer lookup)
5. cBranch
6. cProductType
7. cSourceChannel
8. description
9. assignedUserId
```

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4. Formula Scripts

4.1 Before Save Script

Navigate to: **Administration → Entity Manager → Case → Formula → Before Save**

```JavaScript
// Auto-populate customer type from linked customer
$contactId = contactId;
if ($contactId) {
    $customerType = entity\attribute('Contact', $contactId, 'cCustomerType');
    if ($customerType) {
        cCustomerType = $customerType;
    }
}

// Calculate SLA Resolution Due Date based on category and priority
$category = type;
```

```
$priority = priority;
$created = createdAt;

// SLA Matrix (business hours)
$slaHours = 120; // Default: 5 business days

if ($category == 'Complaint') {
    if ($priority == 'Urgent') {
        $slaHours = 48;
    } else if ($priority == 'High') {
        $slaHours = 72;
    } else if ($priority == 'Normal') {
        $slaHours = 120;
    } else {
        $slaHours = 168;
    }
} else if ($category == 'Service') {
    if ($priority == 'Urgent') {
        $slaHours = 24;
    } else if ($priority == 'High') {
        $slaHours = 48;
    } else {
        $slaHours = 72;
    }
} else if ($category == 'Inquiry') {
    if ($priority == 'Urgent') {
        $slaHours = 8;
    } else if ($priority == 'High') {
        $slaHours = 24;
    } else {
        $slaHours = 48;
    }
}

// Simple SLA calculation (add hours to created date)
// Note: For true business hours, implement via scheduled job
if (!cSlaResolutionDue) {
    cSlaResolutionDue = datetime\addHours($created, $slaHours);
}

// Set resolved timestamp when status changes to Resolved
$statusWas = entity\attributeFetched('status');
if (status == 'Resolved' && $statusWas != 'Resolved') {
    cResolvedAt = datetime\now();
}

// Reset resolved timestamp if reopened
```

```
if (status != 'Resolved' && status != 'Closed' && cResolvedAt) {
    cResolvedAt = null;
}

// Auto-escalate on SLA breach
if (cSlaStatus == 'Breached' && cEscalationLevel == 'None') {
    cEscalationLevel = 'Supervisor';
    status = 'Escalated';
}
```

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5. Assignment Rules

Navigate to: **Administration → Assignment Rules**

Rule 1: Service Cases to Customer Service Team

```None
Name:           Service Case Assignment
Entity Type:    Case
Is Active:      Yes
Order:          1
Conditions:
  Field: type
  Comparison: Equals
  Value: Service

Assignment:
  Type: Round-Robin
  Team: Customer Service Team
  Target Field: assignedUser
```

Rule 2: Complaints to Complaints Team

```None
Name:           Complaint Case Assignment
Entity Type:    Case
Is Active:      Yes
Order:          2
Conditions:
  Field: type
```

```
  Comparison: Equals
  Value: Complaint

Assignment:
  Type: Least-Busy
  Team: Complaints Handling Team
  Target Field: assignedUser
```

Rule 3: Inquiries to General Team

```None
Name:           Inquiry Case Assignment
Entity Type:    Case
Is Active:      Yes
Order:          3
Conditions:
  Field: type
  Comparison: Equals
  Value: Inquiry

Assignment:
  Type: Round-Robin
  Team: General Inquiry Team
  Target Field: assignedUser
```

Rule 4: Branch-Specific Assignment (Override)

```None
Name:           Branch Case Assignment
Entity Type:    Case
Is Active:      Yes
Order:          0 (highest priority)
Conditions:
  Field: cBranchId
  Comparison: Is Not Empty

Assignment:
  Type: Round-Robin
  Team Field: cBranch.teamId
  Target Field: assignedUser
```

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6. Teams Setup

Navigate to: **Administration** → **Teams**

Required Teams

Team Name	**Role**	**Position Access**
Customer Service Team	Case Handler	Branch Staff
Complaints Handling Team	Case Handler	Branch Staff
General Inquiry Team	Case Handler	Branch Staff
Case Supervisors	Supervisor	Branch Manager
Case Managers	Manager	Regional Manager
Compliance Team	Compliance Officer	HQ Staff

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7. Scheduled Jobs

Navigate to: **Administration** → **Scheduled Jobs**

Job 1: SLA Status Monitor

```
None
Name:           Case SLA Monitor
Job:            Custom script (see below)
Scheduling:     Every hour (0 * * * *)
Is Active:      Yes
```

Custom Job Script (requires custom code file):

Create file: `custom/Espo/Custom/Jobs/CaseSlaMonitor.php`

```
PHP
<?php
```

```php
namespace Espo\Custom\Jobs;

use Espo\Core\Job\Job;
use Espo\Core\Job\JobDataLess;
use Espo\ORM\EntityManager;

class CaseSlaMonitor implements Job, JobDataLess
{
    private EntityManager $entityManager;

    public function __construct(EntityManager $entityManager)
    {
        $this->entityManager = $entityManager;
    }

    public function run(): void
    {
        $cases = $this->entityManager
            ->getRDBRepository('Case')
            ->where([
                'status!=' => ['Resolved', 'Closed'],
            ])
            ->find();

        $now = new \DateTime();

        foreach ($cases as $case) {
            $dueDate = $case->get('cSlaResolutionDue');
            if (!$dueDate) continue;

            $due = new \DateTime($dueDate);
            $diff = $due->getTimestamp() - $now->getTimestamp();
            $hoursRemaining = $diff / 3600;

            if ($hoursRemaining < 0) {
                $case->set('cSlaStatus', 'Breached');
            } elseif ($hoursRemaining <= 8) {
                $case->set('cSlaStatus', 'At Risk');
            } else {
                $case->set('cSlaStatus', 'On Track');
            }

            $this->entityManager->saveEntity($case);
        }
    }
}
```

8. Email Templates

Navigate to: **Administration → Email Templates**

Template 1: Case Acknowledgment

None

```
Name:           Case Acknowledgment
Subject:        Case #{cCaseNumber} - We've received your {type}

Body (HTML):
Dear {contactName},

Thank you for contacting Siyapatha Finance.

Your {type} has been received and assigned case number:
<strong>{cCaseNumber}</strong>

<strong>Case Details:</strong>
- Category: {type}
- Priority: {priority}
- Expected Resolution: {cSlaResolutionDue}

We will update you as your case progresses.

Best regards,
Siyapatha Finance Customer Care
```

Template 2: Case Resolution

None

```
Name:           Case Resolution
Subject:        Case #{cCaseNumber} has been resolved

Body (HTML):
Dear {contactName},

We're pleased to inform you that your case has been resolved.

<strong>Case:</strong> {cCaseNumber}
<strong>Resolution:</strong> {cResolutionType}
<strong>Resolved on:</strong> {cResolvedAt}
```

```
<strong>Resolution Details:</strong>
{resolution}

If you're not satisfied with this resolution, please reply to this email.

Thank you for choosing Siyapatha Finance.
```

Template 3: SLA Warning (Internal)

```None
Name:           SLA Warning
Subject:        ⚠️ SLA At Risk - Case #{cCaseNumber}

Body (HTML):
<strong>ALERT: Case approaching SLA breach</strong>

Case: {cCaseNumber} - {name}
Customer: {contactName}
Category: {type}
Priority: {priority}

<strong>Due Date:</strong> {cSlaResolutionDue}

Please take immediate action.
```

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9. BPM Workflow Summary

#	Workflow Name	Trigger	Actions
1	Case Auto-Assignment & Acknowledgment	New case created	Apply assignment rule → Send acknowledgment email → Create follow-up task
2	Case Status Handler	Status changed	On Resolved: wait 7 days → auto-close; On Escalated:

#	Workflow Name	Trigger	Actions
			reassign to supervisor
3	Priority Alert	Priority = Urgent/High	Immediate notification to manager

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11. Implementation Checklist

Day 1: Fields & Layouts

- [ ] Create 10 custom fields
- [ ] Modify `type` field options
- [ ] Modify `status` field options
- [ ] Configure Detail layout
- [ ] Configure List layout
- [ ] Configure Create form layout
- [ ] Clear cache: Administration → Clear Cache

Day 2: Logic & Automation

- [ ] Add Before Save formula script
- [ ] Create assignment rules (4 rules)
- [ ] BPM workflows
- [ ] Activate workflows

Day 3: Templates & Jobs

- [ ] Create email templates (3 templates)
- [ ] Set up scheduled SLA monitor job
- [ ] Create saved filters (4 filters)
- [ ] Configure teams if not existing

Day 4: Testing

- [ ] Create test cases for each category
- [ ] Verify SLA calculation

- [ ] Test assignment rules
- [ ] Verify workflow triggers
- [ ] Check email notifications

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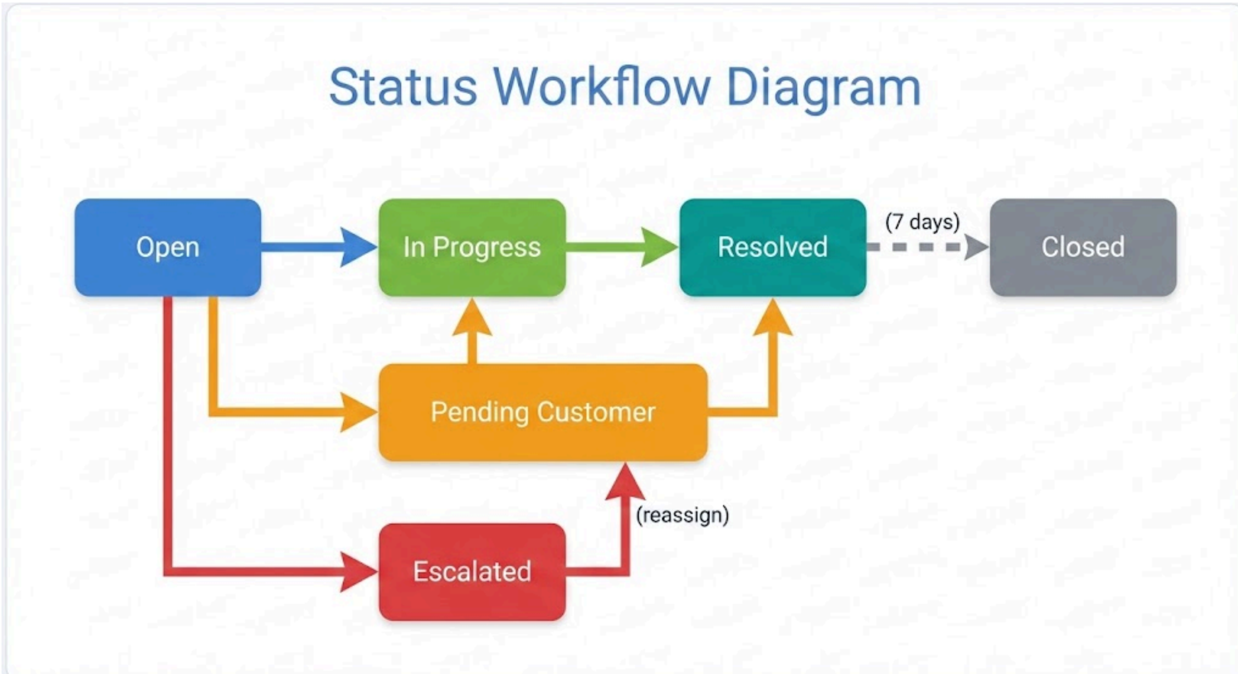
12. Quick Reference

Status Flow Diagram

```
None
+------+    +-------------+    +----------+                     +--------+
| OPEN | -> | IN PROGRESS | -> | RESOLVED | --(wait 7 days)--> | CLOSED |
+------+    +-------------+    +----------+                     +--------+
   |  |            |                 ^
   |  |            v                 |
   |  |   +-----------------+        |
   |  +-> | PENDING CUSTOMER | ------+
   |      +-----------------+
   v
+-----------+
| ESCALATED | --(reassign)--> [Back to IN PROGRESS]
+-----------+
```



SLA Matrix (Business Hours)

Category	**Urgent**	**High**	**Normal**	**Low**
Complaint	48h	72h	120h	168h
Service	24h	48h	72h	120h
Inquiry	8h	24h	48h	72h

Business Hours Configuration

- Working hours: 8:30 AM - 5:00 PM
- Working days: Monday - Saturday
- Weekend: Sunday only
- Holidays: Configure in scheduled job