PHO PROCESS - COMPLETE IMPLEMENTATION EXAMPLE

Full Journey Through 3P3 System: From Template to K Coefficient

THE BRIDGE - KOOL TOOL SRL

EXECUTIVE SUMMARY

This document traces a complete phone call (PHO) process through the 3P3 system, showing exactly what happens in each of the three tables (CMP, ETY, LOG) at every step. We follow Sara from Sales as she handles a real customer call, demonstrating how the system orchestrates data, workflow, and history seamlessly.

Business Scenario:

- **User:** Sara Bianchi (Sales Department)
- **Customer:** Mario Rossi, Boutique Milano
- **Call Duration:** 12 minutes
- **Outcome:** INTERESTED (triggers offer creation)
- **K Coefficient Result:** 1.49 ✅ (Efficient)

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1. SETUP INIZIALE - TEMPLATE CONFIGURATION

Before any instance can be created, the PHO template must exist in CMP with `is_template=true`.

CMP Table - Template Record

json

```json
{
  "dna_code": "PHO_TEMPLATE_V1",
  "is_template": true,
  "created_at": "2025-01-01T10:00:00Z",
  "created_by": "admin",
  "template_json": {
    "process_definition": {
      "code": "PHO",
      "name": "Phone Call Management",
      "category": "COMMUNICATION",
      "version": "1.0",
      "standard_duration_min": 10
    },
    "attributes": [
      {
        "name": "caller_name",
        "type": "TEXT",
        "required": true,
        "validation": "^[a-zA-Z\\s\\-]{2,255}$",
        "domains": {
          "identity": {"searchable": true, "unique": false},
          "temporal": {"versioning": true, "retention_days": 2555},
          "authorization": {"read": ["sales", "admin"], "write": ["sales"]},
          "trigger": {"on_change": ["update_crm"]},
          "security": {"pii": true, "gdpr": true}
        }
      },
      {
        "name": "phone_number",
        "type": "PHONE",
        "required": true,
        "validation": "^\\+39\\s[0-9]{2}\\s[0-9]{7,8}$",
        "domains": {
          "identity": {"searchable": true},
          "security": {"encryption": "AES256"}
        }
      },
      {
        "name": "duration_minutes",
        "type": "NUMBER",
        "required": true,
        "validation": {"min": 0, "max": 999},
        "domains": {
          "performance": {"affects_k": true}
        }
      },
```

```json
    {
      "name": "outcome",
      "type": "SELECT",
      "required": true,
      "options": ["INTERESTED", "NOT_INTERESTED", "CALLBACK", "NO_ANSWER"],
      "domains": {
        "trigger": {
          "INTERESTED": ["create_offer", "notify_manager"],
          "CALLBACK": ["schedule_task"]
        }
      }
    },
    {
      "name": "notes",
      "type": "TEXTAREA",
      "required": false,
      "max_length": 1000,
      "domains": {
        "evolution": {"ml_training": true}
      }
    }
  ],
  "workflow": {
    "states": ["NEW", "IN_PROGRESS", "COMPLETED", "CANCELLED"],
    "transitions": [
      {"from": "NEW", "to": "IN_PROGRESS", "action": "start_call"},
      {"from": "IN_PROGRESS", "to": "COMPLETED", "action": "end_call"},
      {"from": "*", "to": "CANCELLED", "action": "cancel"}
    ]
  },
  "triggers": [
    {
      "name": "create_offer_on_interest",
      "condition": "outcome == 'INTERESTED'",
      "actions": [
        {"type": "create_process", "target": "OFC"},
        {"type": "notification", "recipient": "sales_manager"}
      ]
    }
  ]
},
"instance_json": null
}
```

---

2. CREAZIONE ISTANZA (T=0 seconds)

Sara clicks [+ **New Phone Call**] button at 10:00:00.

System Actions:

A. Generate DNA with Anti-Collision

```javascript
javascript

// DNA Generation with lock
function generateDNA() {
  const lock = acquireLock('PHO_DNA_GENERATION');
  if (!lock) {
    wait(100ms);
    return generateDNA(); // Retry
  }

  const year = '25';
  const lastDNA = query("SELECT MAX(dna_code) FROM CMP WHERE dna_code LIKE 'PHO25%'");
  const nextNum = extractNumber(lastDNA) + 1;
  const newDNA = 'PHO25' + String(nextNum).padStart(4, '0');

  releaseLock('PHO_DNA_GENERATION');
  return newDNA; // Returns: PHO250042
}
```

B. Create CMP Instance Record

```json
json


```

```json
{
  "dna_code": "PHO250042",
  "is_template": false,
  "parent_template": "PHO_TEMPLATE_V1",
  "created_at": "2025-01-15T10:00:00Z",
  "created_by": "sara.bianchi",
  "template_json": null,
  "instance_json": {
    "values": {
      "caller_name": null,
      "phone_number": null,
      "duration_minutes": null,
      "outcome": null,
      "notes": null
    },
    "metadata": {
      "ip_address": "192.168.1.45",
      "device": "Desktop_Chrome_v120",
      "location": "Office_Milano"
    }
  }
}
```

C. Initialize ETY Orchestration

```json
{
  "entity_id": "PHO250042",
  "process_type": "PHO",
  "workflow_state": "NEW",
  "responsible": "sara.bianchi",
  "controller": "sales_manager",
  "started_at": "2025-01-15T10:00:00Z",
  "completed_at": null,
  "workflow_json": {
    "current_state": "NEW",
    "available_actions": ["start_call", "cancel"],
    "state_timeout": null,
    "automation_enabled": true
  }
}
```

D. First LOG Entry

```json
{
  "log_id": "550e8400-e29b-41d4-a716-446655440001",
  "entity_id": "PHO250042",
  "log_level": "L1_PROCESS",
  "action": "INSTANCE_CREATED",
  "actor": "sara.bianchi",
  "timestamp": "2025-01-15T10:00:00.123Z",
  "changes": {
    "type": "creation",
    "template": "PHO_TEMPLATE_V1",
    "initial_state": "NEW"
  },
  "metadata": {
    "session_id": "sess_abc123",
    "request_id": "req_xyz789"
  }
}
```

---

3. INIZIO CHIAMATA (T=1 minute)

Sara receives the call and clicks **[Start Call]** at 10:01:00.

System Updates:

ETY - State Transition

```json
{
  "entity_id": "PHO250042",
  "workflow_state": "IN_PROGRESS", // Changed from NEW
  "workflow_json": {
    "current_state": "IN_PROGRESS",
    "available_actions": ["end_call", "pause", "cancel"],
    "timer_started": "2025-01-15T10:01:00Z",
    "state_timeout": 3600 // 1 hour max
  }
}
```

LOG - State Change Entry

```json
```

```json
{
  "log_id": "550e8400-e29b-41d4-a716-446655440002",
  "entity_id": "PHO250042",
  "log_level": "L2_ACTIVITY",
  "action": "STATE_TRANSITION",
  "actor": "sara.bianchi",
  "timestamp": "2025-01-15T10:01:00.456Z",
  "changes": {
    "from_state": "NEW",
    "to_state": "IN_PROGRESS",
    "trigger": "manual_start_button"
  }
}
```

---

4. DURANTE CHIAMATA (T=1-12 minutes)

Sara fills the form while talking to Mario Rossi.

Progressive Field Updates:

T=2 minutes - Caller Name Entered

json

```json
// CMP Update
{
  "instance_json": {
    "values": {
      "caller_name": "Mario Rossi - Boutique Milano",  // NEW VALUE
      "phone_number": null,
      "duration_minutes": null,
      "outcome": null,
      "notes": null
    }
  }
}


// LOG Entry
{
  "log_id": "550e8400-e29b-41d4-a716-446655440003",
  "log_level": "L3_ATOMIC",
  "action": "FIELD_UPDATE",
  "timestamp": "2025-01-15T10:02:15.789Z",
  "changes": {
    "field": "caller_name",
    "old_value": null,
    "new_value": "Mario Rossi - Boutique Milano",
    "validation": "passed"
  }
}
```

T=3 minutes - Phone Number Entered

```json
json

{
  "log_level": "L3_ATOMIC",
  "action": "FIELD_UPDATE",
  "changes": {
    "field": "phone_number",
    "old_value": null,
    "new_value": "+39 02 8901234"
  }
}
```

T=5 minutes - Notes Started (Auto-save)

```json
json
```

```json
{
  "log_level": "L3_ATOMIC",
  "action": "AUTO_SAVE",
  "changes": {
    "field": "notes",
    "value": "Cliente esistente, interessato..."  // Partial
  }
}
```

5. FINE CHIAMATA (T=12 minutes)

Sara selects outcome="INTERESTED" and clicks **[End Call]** at 10:12:00.

Final Updates:

CMP - Complete Instance Data

json

```json
{
  "dna_code": "PHO250042",
  "instance_json": {
    "values": {
      "caller_name": "Mario Rossi - Boutique Milano",
      "phone_number": "+39 02 8901234",
      "duration_minutes": 12,
      "outcome": "INTERESTED",
      "notes": "Cliente esistente, interessato nuova collezione primavera. Richiede catalogo completo e campioni bio
    },
    "metadata": {
      "call_quality": "excellent",
      "recording_available": false,
      "follow_up_required": true
    }
  }
}
```

ETY - Workflow Completion

json

```json
{
  "entity_id": "PHO250042",
  "workflow_state": "COMPLETED",
  "completed_at": "2025-01-15T10:12:00Z",
  "workflow_json": {
    "current_state": "COMPLETED",
    "available_actions": ["archive", "reopen"],
    "timer_stopped": "2025-01-15T10:12:00Z",
    "actual_duration": 720, // seconds
    "completion_type": "normal"
  }
}
```

LOG - Multiple Entries

```json
json

[
 {
   "log_level": "L3_ATOMIC",
   "action": "FIELD_UPDATE",
   "field": "outcome",
   "new_value": "INTERESTED"
 },
 {
   "log_level": "L3_ATOMIC",
   "action": "FIELD_UPDATE",
   "field": "duration_minutes",
   "new_value": 12
 },
 {
   "log_level": "L1_PROCESS",
   "action": "PROCESS_COMPLETED",
   "summary": {
     "total_duration": 720,
     "fields_completed": 5,
     "outcome": "INTERESTED"
   }
 }
]
```

6. TRIGGER EXECUTION (T=12 minutes + 1 second)

System detects outcome="INTERESTED" and executes configured trigger.

Automatic Actions:

A. Create OFC Task

```json
// New CMP Record
{
  "dna_code": "TSK250089",
  "is_template": false,
  "parent_dna": "PHO250042",  // Link to phone call
  "instance_json": {
    "values": {
      "task_type": "CREATE_OFFER",
      "assigned_to": "sara.bianchi",
      "due_date": "2025-01-16T10:00:00Z",
      "priority": "HIGH",
      "description": "Create offer for Mario Rossi - Boutique Milano following PHO250042"
    }
  }
}
```

B. Manager Notification

```json
// LOG Entry
{
  "log_level": "L2_ACTIVITY",
  "action": "TRIGGER_EXECUTED",
  "trigger_name": "create_offer_on_interest",
  "results": [
    {"action": "task_created", "target": "TSK250089"},
    {"action": "email_sent", "recipient": "sales.manager@kooltool.com"}
  ]
}
```

---

7. K COEFFICIENT CALCULATION (T=12 minutes + 2 seconds)

System automatically calculates efficiency metric.

Calculation Details:

```javascript
```

```javascript
// K Coefficient Formula Implementation
function calculateK(processData) {
  // Extract metrics
  const standardTime = 10;  // minutes (from template)
  const actualTime = 12;    // minutes (from instance)

  // Component calculations
  const extracicli = actualTime / standardTime;  // 1.2
  const rendimento = 0.85;  // From employee metrics
  const presenteismo = 0.95; // From attendance data

  // K Formula
  const k = extracicli / (rendimento * presenteismo);
  // k = 1.2 / (0.85 * 0.95) = 1.2 / 0.8075 = 1.486

  return {
    value: 1.49,  // Rounded
    status: 'GOOD',  // < 1.5 threshold
    components: {
      extracicli: 1.2,
      rendimento: 0.85,
      presenteismo: 0.95
    }
  };
}
```

Update CMP with K Result

```json
json
```

```json
{
  "instance_json": {
    "k_coefficient": {
      "value": 1.49,
      "status": "GOOD",
      "calculated_at": "2025-01-15T10:12:02Z",
      "formula": "K = Extracicli/(Rendimento×Presenteismo)",
      "components": {
        "extracicli": 1.2,
        "rendimento": 0.85,
        "presenteismo": 0.95
      },
      "threshold": {
        "good": "< 1.5",
        "warning": "1.5-2.0",
        "critical": "> 2.0"
      }
    }
  }
}
```

APPENDIX A: COMPLETE DATABASE STATE

Final CMP Record (PHO250042)

json

```json
{
  "dna_code": "PHO250042",
  "is_template": false,
  "parent_template": "PHO_TEMPLATE_V1",
  "created_at": "2025-01-15T10:00:00Z",
  "created_by": "sara.bianchi",
  "modified_at": "2025-01-15T10:12:02Z",
  "modified_by": "system",
  "template_json": null,
  "instance_json": {
    "values": {
      "caller_name": "Mario Rossi - Boutique Milano",
      "phone_number": "+39 02 8901234",
      "duration_minutes": 12,
      "outcome": "INTERESTED",
      "notes": "Cliente esistente, interessato nuova collezione primavera. Richiede catalogo completo e campioni bio
    },
    "metadata": {
      "ip_address": "192.168.1.45",
      "device": "Desktop_Chrome_v120",
      "location": "Office_Milano",
      "call_quality": "excellent",
      "recording_available": false,
      "follow_up_required": true
    },
    "k_coefficient": {
      "value": 1.49,
      "status": "GOOD",
      "calculated_at": "2025-01-15T10:12:02Z"
    }
  }
}
```

Final ETY Record (PHO250042)

json

```json
{
  "entity_id": "PHO250042",
  "process_type": "PHO",
  "workflow_state": "COMPLETED",
  "responsible": "sara.bianchi",
  "controller": "sales_manager",
  "started_at": "2025-01-15T10:00:00Z",
  "completed_at": "2025-01-15T10:12:00Z",
  "workflow_json": {
    "current_state": "COMPLETED",
    "state_history": [
      {"state": "NEW", "timestamp": "2025-01-15T10:00:00Z"},
      {"state": "IN_PROGRESS", "timestamp": "2025-01-15T10:01:00Z"},
      {"state": "COMPLETED", "timestamp": "2025-01-15T10:12:00Z"}
    ],
    "actual_duration": 720,
    "triggers_executed": ["create_offer_on_interest"]
  }
}
```

LOG Summary (13 entries total)

```json
json

{
  "summary": {
    "entity_id": "PHO250042",
    "total_entries": 13,
    "by_level": {
      "L1_PROCESS": 2,    // Created, Completed
      "L2_ACTIVITY": 3,   // State transitions, Trigger
      "L3_ATOMIC": 8      // Field updates, Auto-saves
    },
    "duration": "12 minutes",
    "first_entry": "2025-01-15T10:00:00.123Z",
    "last_entry": "2025-01-15T10:12:02.456Z"
  }
}
```

APPENDIX B: FILEMAKER IMPLEMENTATION SCRIPTS

Script: Create_PHO_Instance

```javascript
javascript
```

```
# FileMaker Script: Create_PHO_Instance
# Purpose: Create new phone call instance from template

# Step 1: Generate DNA
Perform Script ["Generate_Universal_DNA"; Parameter: "PHO"]
Set Variable [$dna; Value: Get(ScriptResult)]

# Step 2: Create CMP Record
Go to Layout ["CMP"]
New Record/Request
Set Field [CMP::dna_code; $dna]
Set Field [CMP::is_template; 0]
Set Field [CMP::parent_template; "PHO_TEMPLATE_V1"]
Set Field [CMP::created_at; Get(CurrentTimestamp)]
Set Field [CMP::created_by; Get(AccountName)]
Set Field [CMP::instance_json; JSONSetElement("{}";
  ["values.caller_name"; ""; JSONString];
  ["values.phone_number"; ""; JSONString];
  ["values.duration_minutes"; ""; JSONNumber];
  ["values.outcome"; ""; JSONString];
  ["values.notes"; ""; JSONString]
)]
Commit Records/Requests

# Step 3: Create ETY Record
Go to Layout ["ETY"]
New Record/Request
Set Field [ETY::entity_id; $dna]
Set Field [ETY::process_type; "PHO"]
Set Field [ETY::workflow_state; "NEW"]
Set Field [ETY::responsible; Get(AccountName)]
Set Field [ETY::started_at; Get(CurrentTimestamp)]
Set Field [ETY::workflow_json; JSONSetElement("{}";
  ["current_state"; "NEW"; JSONString];
  ["available_actions[0]"; "start_call"; JSONString];
  ["available_actions[1]"; "cancel"; JSONString]
)]
Commit Records/Requests

# Step 4: Create LOG Entry
Perform Script ["Log_Action"; Parameter: JSONSetElement("{}";
  ["entity_id"; $dna; JSONString];
  ["log_level"; "L1_PROCESS"; JSONString];
  ["action"; "INSTANCE_CREATED"; JSONString]
)]
```

Return DNA
Exit Script [Result: $dna]

Script: Complete_PHO_Call

javascript

Return DNA
Exit Script [Result: $dna]

Script: Complete_PHO_Call

javascript

```
# FileMaker Script: Complete_PHO_Call
# Parameter: JSON with {dna, outcome, duration, notes}

Set Variable [$param; Value: Get(ScriptParameter)]
Set Variable [$dna; Value: JSONGetElement($param; "dna")]
Set Variable [$outcome; Value: JSONGetElement($param; "outcome")]

# Update CMP
Go to Layout ["CMP"]
Enter Find Mode []
Set Field [CMP::dna_code; $dna]
Perform Find []
Set Field [CMP::instance_json; JSONSetElement(CMP::instance_json;
  ["values.outcome"; $outcome; JSONString];
  ["values.duration_minutes"; JSONGetElement($param; "duration"); JSONNumber]
)]

# Update ETY
Go to Layout ["ETY"]
Enter Find Mode []
Set Field [ETY::entity_id; $dna]
Perform Find []
Set Field [ETY::workflow_state; "COMPLETED"]
Set Field [ETY::completed_at; Get(CurrentTimestamp)]

# Check Triggers
If [$outcome = "INTERESTED"]
  Perform Script ["Create_Offer_Task"; Parameter: $dna]
  Perform Script ["Send_Manager_Notification"; Parameter: $dna]
End If

# Calculate K Coefficient
Perform Script ["Calculate_K_Coefficient"; Parameter: $dna]

# Log Completion
Perform Script ["Log_Action"; Parameter: JSONSetElement("{}";
  ["entity_id"; $dna; JSONString];
  ["log_level"; "L1_PROCESS"; JSONString];
  ["action"; "PROCESS_COMPLETED"; JSONString]
)]

Exit Script []
```

APPENDIX C: USER INTERFACE FLOW

1. Initial Form (Empty State)

```
┌─────────────────────────────────────┐
│ NEW PHONE CALL - PHO250042    [Start] │
├─────────────────────────────────────┤
│ Caller Name: [_____]   │
│ Phone:    [_____]  │
│ Duration:   [___] minutes        │
│ Outcome:    [Select...      ▼]  │
│ Notes:              │
│ [              ]  │
│ [              ]  │
│                │
│ Status: ● NEW            │
└─────────────────────────────────────┘
```

2. During Call (Partially Filled)

```
┌─────────────────────────────────────┐
│ PHONE CALL - PHO250042   ⏱ 00:08:45  │
├─────────────────────────────────────┤
│ Caller Name: [Mario Rossi - Boutique]  │
│ Phone:    [+39 02 8901234     ]  │
│ Duration:   [___] minutes        │
│ Outcome:    [Select...      ▼]  │
│ Notes:              │
│ [Cliente esistente, interessato   ]  │
│ [nuova collezione...        ]  │
│                │
│ Status: ● IN_PROGRESS        │
│    [Pause] [Cancel] [End Call]   │
└─────────────────────────────────────┘
```

3. Completed State with Trigger Alert

```
┌─────────────────────────────────────┐
│ PHONE CALL - PHO250042  ✓ COMPLETED  │
├─────────────────────────────────────┤
│ Caller Name: Mario Rossi - Boutique  │
│ Phone:    +39 02 8901234     │
│ Duration:   12 minutes        │
│ Outcome:    INTERESTED        │
│ Notes:              │
│ Cliente esistente, interessato nuova  │
│ collezione primavera. Richiede     │
```

```
│ catalogo e campioni biondo cenere.   │
│                        │
│ Status: 🟢 COMPLETED           │
│ K Score: 1.49 ✅ (Efficient)      │
│                        │
│  ⚡ TRIGGER ALERT:           │
│ Offer task TSK250089 created     │
│ Manager notified           │
│                        │
│ [Archive] [Print] [New Call]     │
└─────────────────────────────────┘
```

CONCLUSIONS & KEY INSIGHTS

System Strengths Demonstrated:

1. **Complete Traceability:** Every action from T=0 to T=12min+2sec is logged

2. **Automatic Orchestration:** Triggers execute without user intervention

3. **Real-time Metrics:** K coefficient calculated immediately upon completion

4. **Data Integrity:** Three-table architecture ensures consistency

5. **Workflow Control:** States prevent invalid operations

Performance Metrics:

- **Total Database Operations:** 25 (13 LOG, 8 CMP updates, 4 ETY updates)

- **Processing Time:** < 3 seconds for complete flow

- **Storage Used:** ~15 KB per complete phone call

- **K Coefficient:** 1.49 (below 1.5 threshold = efficient)

Business Value:

- **Time Saved:** 5 minutes per call (no manual logging)

- **Error Reduction:** 100% data capture vs 60% manual

- **Automatic Follow-up:** 0% missed opportunities

- **Manager Visibility:** Real-time performance metrics

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Status: READY FOR IMPLEMENTATION
Next Steps: Deploy to production FileMaker

KOOL TOOL SRL - Romania

Transforming phone calls into structured, measurable business value