



The formula for  
**Success**

**connecting people**

The ICC, Birmingham

23 - 25 November 2014

## UK & IRELAND SAP USER GROUP CONFERENCE

Bombardier Aerospace (Belfast)  
Time Management Implementation Review

# Personal Introduction

- Paul Neely - 26 years Bombardier.
- First 13 years in HR/Payroll.
- Last 13 years as an IT Analyst.

# Time Management Implementation Review

- Project completed within budget and on time, 2003.
- This presentation will:
  - Share our project experiences
  - Highlight some tools and techniques
  - Lessons learnt.

# BOMBARDIER

the evolution of mobility

- Multinational Canadian transportation company.
- Aerospace includes Business and Commercial Aircraft.

# Business Aircraft

Challenger



Learjet

Global



# John Travolta



Travolta, who owns a Challenger, promoting Bombardier Aerospace's Challenger 650.

# Commercial Aircraft

Q-Series



CRJ



C-Series



# Company Structure - Aerospace

36,000  
Employees.  
Larger sites:



Other sites  
include:

Amsterdam  
Shenyang  
Frankfurt  
Casablanca  
India

... and many  
Sales/Regional  
Offices worldwide



# Need for Change – 1980's systems

```

SHORTS PLC                               13-Jun-03 13:17:59
SYSTEM MENU

1. Enquiries
2. Reports
3. File Maintenance
4. Individual Employee Updates
5. Mass Employee Updates
6. Utilities
7. Operations
8. Payroll Interface

Option █
    
```

```

WELCOME TO VERSION 9.1 - SHORT BROTHERS          PER
Helen Armstrong - Trainee

PAYMASTER                                END OF PERIOD/YEAR

PAR Parameters and Definitions                EOP End of pay period
EE Employee details                          EOY End of tax year
TPER This Period Details
EXTB External Batches
CALC Calculate Pay

UTILITIES & GENERAL

ENTS Payroll utilities
& General Reports                          DCL DCL command procedures
ER Payroll Data Securities
s and Definitions                          OPS Monitor operations
Details                                     BTH Batch Jobs
Reports                                     ENQ Enquiry Facilities
    
```

```

SHORTS PLC
EMPLOYEE TRANSACTIONS

Employee No 6201      HEE
Year/Week  03/95

Act/  Rnd/  W/P      Clk/
Start Duratn Day Date I/O Rota Accum

08:49 08:49 MON 27-JAN I 8888      Clocking FKSSUPPORT
17:30 17:30 MON 27-JAN 0 8888      Clocking FKSSUPPORT
08:44 08:44 TUE 28-JAN I 8888      Clocking FKSSUPPORT
17:07 17:07 TUE 28-JAN I 8888      Clocking FKSSUPPORT
08:09 08:09 WED 29-JAN I 8888      Clocking FKSSUPPORT
17:05 17:05 WED 29-JAN I 8888      Clocking FKSSUPPORT
08:05 08:05 FRI 31-JAN I 8888      Clocking FKSSUPPORT
13:49 13:49 FRI 31-JAN 0 8888      Clocking FKSSUPPORT
8:10  7:55  THU          05      Code abs/hrs TLETSON

Press RETURN for possible further records
    
```

```

13-Jun-03 13:18:41
G ENQUIRY

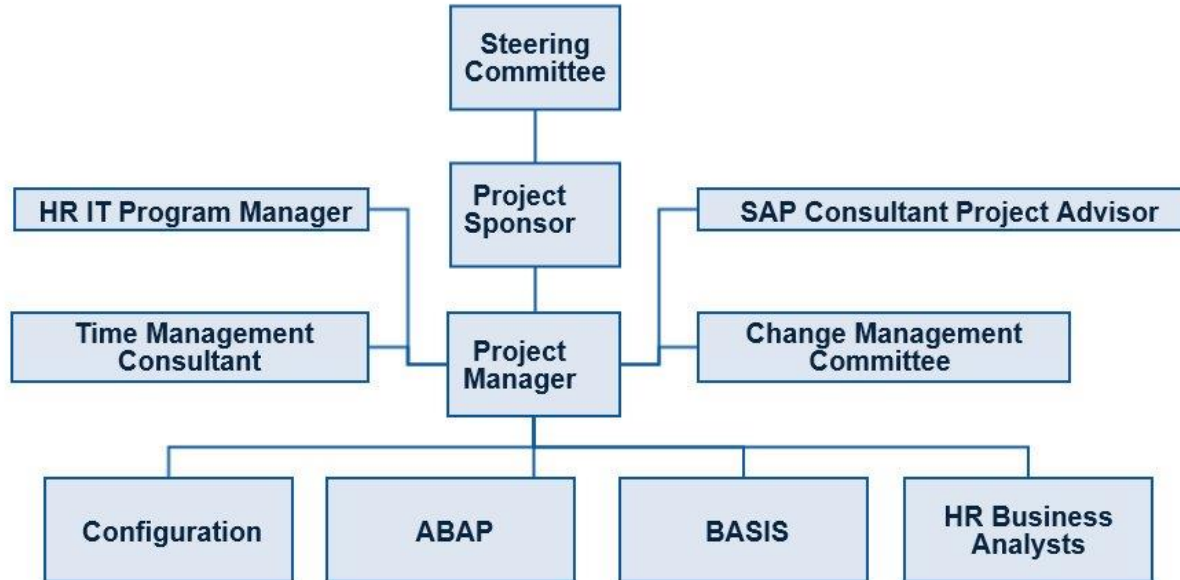
Location Time
050507 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 01:45 2205 01:50
055410 TAR001 : Employee 055410 failed to clock out. Location 2205 2205 02:48
056673 TAR001 : Employee 056673 failed to clock out. Location 2205 2205 02:47
000441 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:27 2205 05:30
000013 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:28 2205 05:30
051304 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:30 2205 05:35
050504 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:30 2205 05:35
057280 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:33 2205 05:35
020036 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:34 2205 05:35
002590 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:35 2205 05:40
011264 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:37 2205 05:40
054201 TAR000 : Remote clocking by FKSSUPPORT on 25-JAN-2003 05:37 2205 05:40

Press RETURN for further records
    
```

# SAP Time Management Project

- Work started 2002, took 11 months
- Budget \$918,000
- Completed 3% under budget: \$870,000

# Project Team Structure



# Project Estimates

- Based on:
  - 5000 employees
  - 2000 users
  - 500 work schedules
  - Replacement scope
  - Only essential history



# Project Plan

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB

Project Preparation

Complete  
26 Feb

Business  
Blueprint

Complete  
26 Apr

Realisation

Complete  
29 Nov

Final  
Prep

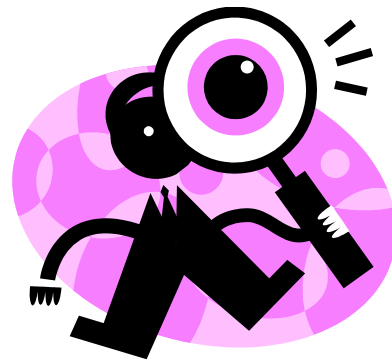
Complete  
31 Jan

Go  
Live

3 Feb

# Testing Strategy

- Unit testing
- Integration Testing
- Parallel Running



# Conversion & Cutover

- Tool – LSMW
- Work schedules
- Sickness history (SSP)
- Clocking stations switched to new network. (TCP/IP protocol).

**Legacy System Migration Workbench**

All Objects | My Objects | All Project Objects | Project Documentation

Project Selection

Project	PROD_SUPP	<input type="checkbox"/> Production Support Mass Update
Subproject	INFOTYPES	Infotypes
Object	IT0002	IT0002 Personal Data

# Conversion & Cutover

Infotype 0007

## Display Planned Working Time

Work schedule

Personnel No.  Name   
 EE group 1 Employee Subarea 0055 HR  
 EE subgroup 12 Managers Cost Center 1013 Personnel H/Q  
 Start 26.07.2014 To 31.12.9999 Chg. 05.08.2014 MCKINSLX

### Work schedule rule

Work schedule rule K4001 FLX 36.00  
 Time Mgmt status 1 1 - Time evaluation of actual times  
 Working week 09 WW Shorts (starting Saturday)  
 Part-time employee Regular/Temporary St  R

### Working time

Employment percent 100.00  Dyn. daily work schedule  
 Daily working hours 7.20 Min. 0.00 Max. 0.00  
 Weekly working hours 36.00 Min. 0.00 Max. 0.00  
 Monthly working hrs 156.00 Min. 0.00 Max. 0.00  
 Annual working hours 1872.00 Min. 0.00 Max. 0.00  
 Weekly workdays 5.00

### Additional fields

Flexi Time Employee  Carer Employee

Infotype 0085

## Create SSP1(L) Form Data GB



Personnel No.  Name   
 EE group 1 Employee Subarea 0055 HR  
 EE subgroup 12 Managers Cost Center 1013 Personnel H/Q  
 Start 26.07.2014 to 31.12.9999

### Previous employment

Date SSP1(L) Received  Weeks Sick Paid Prev. ER   
 Last Sick Pay Date Prev. ER

### Leaver's information

Notification of Leaving   
 Last Sick Pay Date ER

Infotype 0050

## Display Time Recording Info



Pers.No.  Name   
 Pers.area 1000 Bombardier Shorts Cost Ctr 5068 IT-HR Competency Cen  
 EE subgrp 12 Managers WS rule KX062 FLX 24.00 Rduced Hrs  
 Start 22.11.2007 To 31.12.9999 Chg. 28.11.2007 LETSONGY

### Time ID

Time rec.ID no.   
 ID version

### Interface data

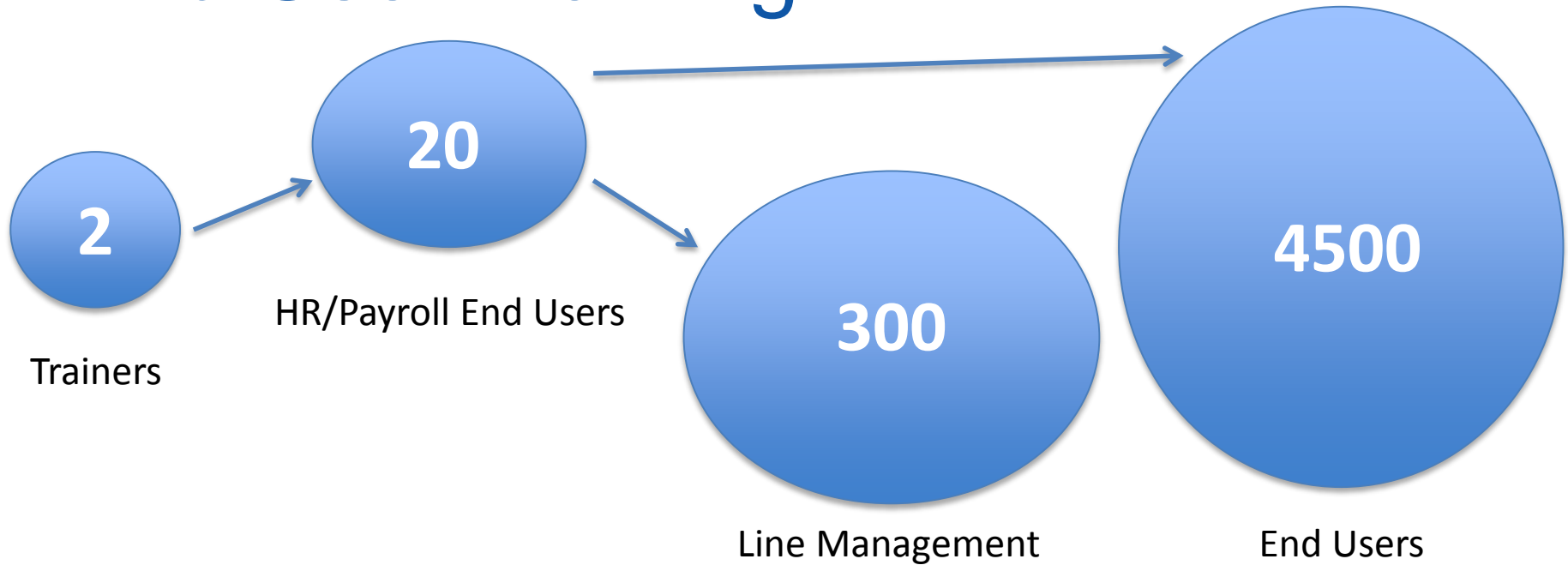
Time event type grp 01  
 Subsystem grouping 001  
 Grp. att/absence 001  
 EE expenses grpng 001  
 Access control group   
 Mail indicator   
 Personal code

### Time variables

Grp for TE rule   
 Flextime maximum 0.00  
 Flextime minimum 0.00  
 Time bonus/deduction 0.00  
 Standard overtime   
 Additional indicator



# End User Training



# Vax Terminal

Old access method ...



# eTime (Our Custom Application)

**BELFAST SAP TIME**  
Time Information Master Enquiry

Register here

System: PRD  
Client\*: 500  
User\*:  
Password\*:  
Language: English

Change Password

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**BOMBARDIER**  
SAP NetWeaver™  
SAP Web Application Server

BOMBARDIER AEROSPACE - T.I.M.E

- 
- 
- 
- 
- 
- 
- 
- 
- 
- 
- 

Please use Employee ID as shown on work pass rather than Clock No

Last logged on: 12.11.2014 at 11:42:04

BOMBARDIER AEROSPACE - T.I.M.E 12.11.2014 22:22:45

EMPLOYEE TRANSACTIONS ENQUIRY

Personnel no: [redacted]

Period Start: 08.11.2014 Period End: 14.11.2014 Time Type: [ ]

Act/Start	Duration	W/P Day	Date	Action Type	User Name
08:51		Mon	10/11/2014	Clock-in/-out	
17:38		Mon	10/11/2014	Clock-in/-out	
09:05		Tue	11/11/2014	Clock-in/-out	
17:32		Tue	11/11/2014	Clock-in/-out	
07:54		Wed	12/11/2014	Clock-in/-out	
16:45		Wed	12/11/2014	Clock-in/-out	

Please press F12 to return to Enquiry Screen

# eTime (Our Custom Application)

1. Enter a new exception

2. Review unapproved exceptions

3. Review approved exceptions

BOMBARDIER AEROSPACE - T.I.M.E. 12.11.2014 22:28:38

Pers.no.	<input type="text" value="212121"/>	Name	<input type="text" value="Mr. Michael Smith"/>
Pers.area	1000 Bombardier Shorts	Resp Code	0000005068 IT-HR Competency Ce
EE subgrp	12 Managers	WS rule	K1001 FLX 36.00
Subarea	0056 IT	Org.unit	5601 BTS-ADS
Floating Holidays Left	15.92000	Calculated to	13.11.2014

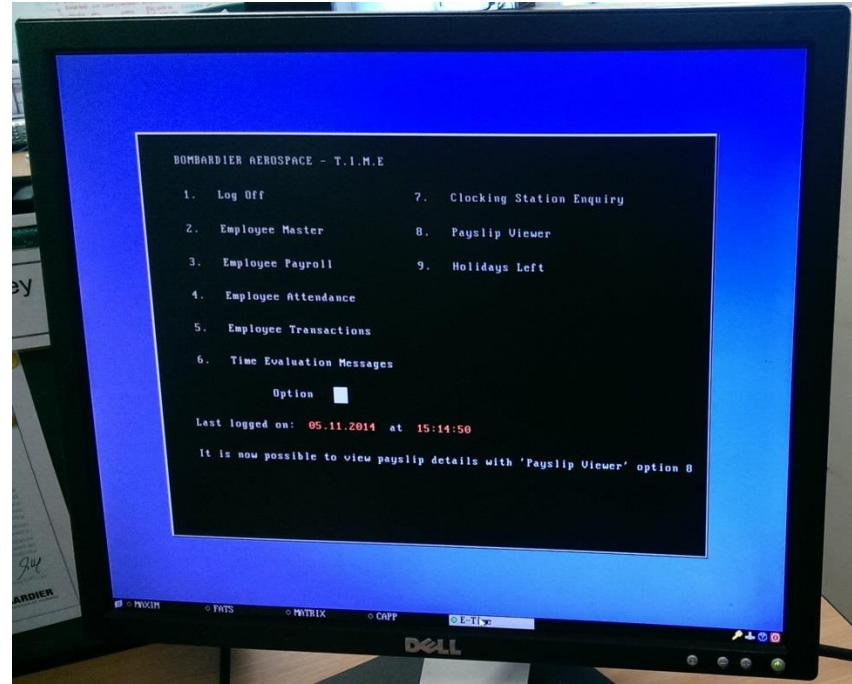
Start  to

Exception Type  \*\*Exceptions require a form

Time  -

Hours

# New AXEL box



# Work Schedules

## Period Work Schedule

08 RW01	NSH 36.00 3333	001	0110	0110	0110	0113	0130	0571	0477
08 RX	NSH 36.00 3333	001	0412	0412	0412	0310	0210	0413	0413
08 SA	4SH XXXXX 3950	001	0119	0119	OFF	OFF	OFF	OFF	0120
08 SA	4SH XXXXX 3950	002	OFF	OFF	OFF	0120	0120	OFF	OFF
08 SA	4SH XXXXX 3950	003	OFF	OFF	0119	0119	0119	OFF	OFF
08 SA	4SH XXXXX 3950	004	0120	0120	0120	OFF	OFF	OFF	0119

## Daily Work Schedule – Shift with premium

**Change View "Daily Work Schedule": Details**

New Entries Delimit

DWS grouping: 08  
Daily work schedule: 0119 OS N

Periods  
Start: 01.01.1901  
End: 31.12.9999

**Planned working hours**  
Planned working hours: 12.00  
DWS selection rule:   
 No planned working hrs.

**Working times**

**Fixed working hours**  
Planned working time: 08:00 - 20:00

**Flexitime**  
Planned working time:  -   
Normal working time:  -   
Core time 1:  -   
Core time 2:  -

**Breaks**  
Work break schedule:

**Tolerance time**  
Begin tolerance:  -   
End tolerance:  -

**Valuation**  
Min. working time:   
Max. working time: 12.01  
Compensation time:   
Additional hours:

Daily WS class: 1  
 Automatic overtime  
 Ind. for arbitrary use

# Work Schedules

ES grouping: 1 Bombardier  
 Holiday Calendar ID: GX Bombardier Shorts Day...  
 PS grouping: 08  
 Work schedule rule: SA001 4SH XXXX 3950

**Periods**  
 Start: 01.01.1901  
 End: .12.9999

**Working time**  
 Daily working hours: 12.00  
 Weekly working hours: 36.00  
 Weekly workdays: 3.00  
 Monthly working hrs: 156.00  
 Annual working hours: 1872.00  
 Addnl monthly hours:

**Work schedule generation**  
 Period work schedule: SA 4SH XXXXX...  
 Ref. date for PWS: 01.02.2003  
 Start point in PWS: 006

**Grouping for daily work schedule**  
 DWS grouping: 08

**Reduced working hours**  
 WS rule for RWRN  
 Alternative WS rule:

Rule for day types: 01  
 Automatic generation:

ESG	ES grpg for WS	Holiday Ca...	Text	PSG	WS rule	Start Date	End Date
1	Bombardier	GX	Bombardier ..	08	SA001	01.01.1901	31.12.9999
1	Bombardier	GX	Bombardier ..	08	SA002	01.01.1901	31.12.9999
1	Bombardier	GX	Bombardier ..	08	SA003	01.01.1901	31.12.9999
1	Bombardier	GX	Bombardier ..	08	SA004	01.01.1901	31.12.9999

Work schedule rule: SA002 4SH XXXX 3950

**Working time**  
 Daily working hours: 12.00  
 Weekly working hours: 36.00  
 Weekly workdays: 3.00

**Work schedule generation**  
 Period work schedule: SA 4SH XXXXX...  
 Ref. date for PWS: 01.02.2003  
 Start point in PWS: 013

Rule for day types: 01  
 Automatic generation:



# Work Schedules

## Period Work Schedule

08 HC	NSH 36.00 0000	001	0262	0262	0262	0263	0230	OFF	0227
08 HD	OTH 36.00 2000	001	2021	2021	2021	2021	2022	0378	0378
08 INAC	36 Hr Week	001	1008	1008	1008	1008	1004	1000	1000
08 K001	FLX 36.00	001	0257	0257	0257	0257	0258	OFF	OFF
08 K002	FLX 30.25	001	0267	0268	0267	0268	0267	OFF	OFF
08 K003	FLX 33.42	001	0267	0268	0268	0268	0483	OFF	OFF

## Daily Work Schedule – for flexitime

DWS grouping

Daily work schedule

Periods

Start	End
01.01.1901	31.12.9999

---

**Planned working hours**

Planned working hours  DWS selection rule

No planned working hrs.

---

**Working times**

Fixed working hours

Planned working time  -

Flexitime

Planned working time  -

Normal working time  -

Core time 1  -

Core time 2  -

Breaks

Work break schedule

Tolerance time

Begin tolerance  -

End tolerance  -

---

**Valuation**

Min. working time  Daily WS class

Max. working time   Automatic overtime

Compensation time

Additional hours  Ind. for arbitrary use



# Work Schedules

Our custom table to store rounding values:

**Display View "Work Schedule Rules for Adjustment": Overview**

Expand <-> Collapse

Work Schedule Rules for Adjustment										
	ESG	Hol...	PSG	Work sc...	End Date	Start Date	workday	number to ad...	target	
	1	GX	8	DA001	31.12.9999	01.01.1901	7	0.0133000-	36.00	▲
	1	GX	8	DB001	31.12.9999	01.01.1901	7	0.0133000-	36.00	▼
	1	GX	8	DC001	31.12.9999	01.01.1901	7	0.0133000-	36.00	□
	1	GX	8	DJ001	31.12.9999	01.01.1901	7	0.0133000-	36.00	
	1	GX	8	DK001	31.12.9999	01.01.1901	7	0.0133000-	36.00	
	1	GX	8	DM001	31.12.9999	01.01.1901	7	0.0133000-	36.00	
	1	GX	8	DT001	31.12.9999	01.01.1901	7	0.0133000	36.00	

# Clocking Stations



Durable, reliable, tamper proof

# Sample Badge

If found please return  
**BOMBARDIER**  
Airport Road  
Belfast  
BT3 9DZ

Employee ID0 [REDACTED]  
Clock No: 00 [REDACTED]  
Access No [REDACTED]  
Issue No 06



## BOMBARDIER



JOHN  
TRAVOLTA

# Absence & Attendance Policies

- Error checks
- Lateness
- Overtime
- Managers
- Flexitime
- Contractors
- Working holidays
- Break times
- Shifts
- 50 types of absences/attendances

```

- Select time wage types
  - RTIP 9502 GEN collect shift and holiday allowances
  - RTIP 9503 GEN collect hours worked on fixed Holidays

- Manage time accounts
  - PRINT NP SALD
  - PRINT NP TES
  - ACT10 9002 clear timetypes for Holidayentitlements
  - PRINT NP TES
  - PRINT NP SALD
  - PRINT NP VS
  - PTIP 9809 GEN check on pass-out hours
  - RTIP 9816 Form day balances
  - RTIP 981A Update 0040
  - RTIP 9811 GEN collect Timetypes for quota /pay deduct Time transfer specifications
  - ACT10 9830 Flexitime balance/overtime/productive hrs not for managers
  - PRINT NP TES
  - IF 9w24 if period >= 06 2010
  - ELSE
  - ENDIF
  - ACT10 9831 Time types for Holiday quota03
  - ACT10 9832 Time types for Holiday quota02
  - PRINT NP TES
  - IF 9CLF if CLF process different sick check
  - ELSE
  - ENDIF
  - PRINT NP TES
  - ACT10 9834 Time types for sick pass quota 01
  - IF 9CLF if CLF do not process hosp app check
  - ELSE
  - ENDIF
  - PRINT NP TES
  - ACT10 9837 Time types for recovery quota 01
  - ACT10 9838 Time types for military service
  - ELSE
  - ENDIF
  - for managers

  - OT through 2012
  - ic Holiday: Evaluate Breaks
  - If CLF calculate overtime differently
  - Adjust absences
  - Check for day with error (BS)
  - check for only one clocking
  - generate absence if not in (BS)
  - Error checks for each pair (BS_R)
  - Process daily work schedule tolerances
  - es
  - Overtime for ABART 9 (riveters)
  - Prepare check of OT Rule "Bomb
  - Checking if flexi and after cp10 2014
  - If false
  - Set dynamic breaks (BS)
  - Assign time type to time pair
  - Evaluate breaks
  - Determine planned pairs
  - Reduce absences

  - on weekly calculation
  - for managers

  - ACT10 9896 count planned work per week
  - PTIP 9032 GEN work on public holidays
  - PTIP 9034 GEN flexitime on public holidays
  - PRINT NP TES
  - PRINT NP SALD
  - IF 9RIF check for shift and week day
  - Processing
  - Call rule 9RIF
  - ENDIF
  
```

# Rules & Schemas

## RPDASC00

### Formatting schemas and personnel calculation rules



Schema	YM00		
Schemas to be exploded	\$\$\$\$	to	ZZZZ
<input checked="" type="checkbox"/> Expand calculation rules			
<input checked="" type="checkbox"/> Expand subordinate PC rules			
calc. rules to be expanded	\$\$\$\$	to	ZZZZ
EE Subgroup Grouping for PCR	<input type="checkbox"/>	to	<input type="checkbox"/>
Language	EN		
Program class	C		

DEV(1)201 ABAP: Variant Directory of Program RPDASC00



Variant catalog for program RPDASC00

Variant name	Short Description
Z_EXPAND_ALL	Expand new schemas and rules

### Formatting schemas and personnel calculation rules

1

9RHW\*\*\*\*\*Y ZHRS=M9003 ADDDB9003-GCY 9RHW1

9RHW1\*\*\*\* DSUBST 01  
 9RHW1\*\*\*\*\*N HRS=S ADDDB9003  
 9RHW1\*\*\*\*\*Y HRS=U ADDDB9003

YM00 070 PTIP 9032 GEN work on public holidays  
 YM00 071 PTIP 9034 GEN flexitime on public holidays  
 YM00 072 PRINT TES  
 YM00 073 PRINT SALD  
 YM00 074 IF 9RIF check for shift and week day

9RIF\*\*\*\*\* D9%RSTZ508A  
 9RIF\*\*\*\*\*N SCOND=F IF  
 9RIF\*\*\*\*\*Y SCOND=T IF

9RIF1\*\*\*\* D9%RSTZ508A  
 9RIF1\*\*\*\*\*N SCOND=F IF  
 9RIF1\*\*\*\*\*Y SCOND=T IF

9RIF2\*\*\*\* DVALEN 1 OUTWPSHIFT  
 9RIF2\*\*\*\*\* ZGCY 9RIF1  
 9RIF2\*\*\*\*\*K DVARSTPRSNT  
 9RIF2\*\*\*\*\*K N ZGCY 9RIF1  
 9RIF2\*\*\*\*\*K Y SCOND=F IF

# Rules & Schemas

000010	COM					copy from TM00 for Shorts (BS)
000020	COM					Time Evaluation with Clock Times
000030	COM					=====
000040	**					Evaluation of time data specifying
000050	**					clock times (including personnel
000060	**					time events or PDC times)
000070	**					***** Before day processing *****
000080	BINI					Initialization
000090	MOD	MODT	GEN			Define groupings
000100	EINI					End of processing block
000110	**					***** Day processing *****
000120	BDAY					Day processing
000130	**					Options:
000140	CHECK		PON			check time recording = 1 or 9
000150	CHECK		RPR			Set retro.acc.for payroll, if required
000160	CHECK		FUT		*	Allow evaluations for future periods
000170	DKG				*	Process reduced hours (BS)

PDSY

PDSY

**HR Documentation Maintenance**

Document class: OPET Operation (Time Management)

Documentation object

Object Name: [ ]

Country: 08 Great Britain

Object Na...	Description of logical information objec
9%DTP	delete TIP entry
9%GTP	Operation (Time Management) 9%GTP
9%INC	insert absence for not clocking in
9%RST	zrovide infos
9%RTP	Round TIP entry with Table Z508A
ADDDB	Cumulate in day balance table
ADDMB	Cumulate in monthly balance table
ADDOT	Transfer to Table ZMO
ADDVS	Cumulate in variable balances table
ADDZL	Cumulate in Time Wage Types Table
ALLDT	Check 24-Hour Coverage from Start of Period
BITQU	Generate Batch Input Session for Attendance Quotas
BREAK	Set a break point
COLER	Transfer to error table
COLOP	Transfer data to internal table TOP

# Payroll Integration



- Hours stored in Time, money in Payroll
- Time Type converted to Wage type in ZL
- Absences/Attendances in arrears (rule)
- Time balances (SALDO) match Payroll period

# Benefits

- System reliable and stable
- Full implementation of company policies
- Improved automation
- Increased visibility of time information
- Accuracy





# Benefits continued



- Payslip can produce more detail
- Managers can connect, view and authorise
- Employee can view and interact online
- Improved job satisfaction

# Conclusion & Lessons Learnt



- Make sure Terms and conditions affecting large numbers are mapped to Employee groupings
- Stay SAP standard as possible
- Put logic into system, not reports/interfaces
- Quick decision making important

# Conclusion & Lessons Learnt

- Ensure consultants share knowledge
- Involve end users throughout a project
- Test thoroughly
- Requirements of all users justify attention
- Document

# Questions?

