Time Management

Positive Time Evaluation

Definition of Positive Time evaluation

- Time evaluation evaluates the attendance and absence times that has been recorded for their master data. The system uses the results of time evaluation to form time balances and time wage types, which may update attendance and absence quotas info types, Passing the results to Payroll and other modules on required.

Info types and Prerequisites :

- **Info types**
  - 0050 – Time recording info.
  - 2002 – Attendances
  - 2011 – Time Events
- Time Types (Table V_555A)
- Time Events
- Time Pairs

What is a TIME EVENT

- The time postings stored in SAP system, such as clock-in and clock out or start and end of working time, that employees enter at a time recording terminal are termed as TIME EVENTS.

Time Event types

- P01 Clock-in or c lock-out entry
- P02 Start or end of break
- P03 Start or end of off-site work
- P04 Start or end of off-site work at home
- P05 Interim entry
- P10 Clock-in
- P11 Change
- P15 Start of break
- P20 Clock-out
- P25 End of break
- P30 Start of off-site work
- P35 Start of off-site work at home
- P40 End of off-site work
- P45 End of off-site work at home
- P50 Employee expenditures (external wage type)
- P60 Information entry

Means Time Events recording

- Self service
- Time recording terminals
- Time administrator

Processing Structure of Pair Formation

- Time events are formed into time pairs before the data is evaluated by the time evaluation driver ***RPTIME00*** (Tr.Code **PT60**).
- All time events are processed that have been
  - Uploaded from a time recording system to the HR system
  - Entered online in the *Time Events* infotype (2011)

Processing of Time Events

- The *processing of time events* - which have been uploaded from the time recording systems to HR - is divided into two logical steps:
  - Firstly, the system forms time pairs from the time events. This is known as PAIR FORMATION.
  - In Second step, Time wage types were generated from the pairs, time balances are calculated, and time quotas are updated.

Time Pair

- The linked Time Events that are logically assigned to the same day are called as Time Pair.
- Time pairs are formed so that time events can be processed in time evaluation and each duration of time worked can be determined. ***For e.g.***

Date	Clock in	Clock Out
• 09.11.2010 • 09.11.2010	• 08:30 • 08:28	• 17:05 • 17:07

Pair formation is carried out on a daily basis.

Pair formation - Previous Day Assignment

- Previous Day Assignment is carried out because only time events which have been assigned logically to the same day are formed into time pairs.
- 24 hours is added to the time of the clock-out entry on account of the previous day assignment.
- A time event is always assigned to the current or previous day in pair formation - never to the subsequent day.

Pair formation- Previous Day Assignment

- Previous day assignment is carried out for a night shift from 10 pm - 6 am
  - EG:
    - Clock-in entry 09/11/2006 21:56
    - Clock-out entry 10/11/2006 06:12
    - Time pair 09/11/2006 21:56 -30:12
- The clock-out entry is assigned in pair formation to the previous day.

Categories of Time Events

Time events which open a pair	• The employee has been absent, and is now at work or working *off-site*. • **Eg:-P10 *Clock in P35 Manual start of off-site work***
Time events which close one pair and open another:	• *The employee is at work, working off-site, or taking a break.* • *P15 Start of break* • *P25 End of break* • *P30 Start of off-site work* • *P40 End of off-site work*
Time events which close one pair, but do not open another	• *The employee was at work or off-site, and is now absent.* • *P20 Clock-out* • *P45 Manual end of off-site work*

Status and Pair Type- During Pair Formation

- When time pairs are formed, additional information on the status and type of each pair is stored.
- The *PAIR TYPE* provides information on an employee's attendance/absence status.
- The *STATUS* of the time pairs notifies the time evaluation program of incomplete time pairs.

Pair type

- The pair type of the time pair describes an employee's attendance or absence status. It specifies whether the employee is at work, taking a break or working off-site.
- **0 Non-recorded absence or break**
- **1 Employee is at work**
- **2 Employee is absent**
- **3 Employee working off-site**

Time pair -Status

- A status is assigned to each time pair during pair formation.
- The status indicates whether the pair is complete, or if a clock-in/out entry is missing.
- Time evaluation's schema processing either continues or cancels further processing, depending on the status of the time pair.
- The status can have the following specifications:
  - BLANK Pair is complete
  - 2 No clock-in
  - 3 No clock-out
  - 4 No break end time
  - 7 No start time for off-site work
  - 8 No end time for off-site work
  - E Order confirmation missing from PDC

Delimiting the Time Pairs

1. A time pair is assigned any status other than Blank is an OPEN TIME PAIR.
2. The time evaluation drivers rule-processing logic can be set up to process open pairs as per customers' requirements.
3. For example, the normal start and end time of the working day may be used as default time events.
4. If no rule is provided for a particular type of open pair, an error message can be generated so that a manual entry can be made to complete the data.

Delimiting Time Pairs in Time Evaluation

The employee records the following time events:
P10 - *Clock-in* 01/02/1997 08:00
P20 - *Clock-out* 01/02/199712:30
P10 - *Clock-in*01/02/1997 13:00

- Pair formation generates the following pairs, pair types and statuses for the day:

Date	Start and end time	Pair type	Status
01/02/1997	08:00 - 12:30	at work	BLANK: pair is complete
01/02/1997	13:00 - ____	at work	3: no clock-out

- The second pair is incomplete.

  Time evaluation interprets the status according to the rules in personnel calculation rule TE30.

  Depending on how long after the end of the daily work schedule the time evaluation program is run, either the missing clock-in entry is provided, or the system issues an error message.

Reports for Batch jobs

- SAPCDT43 - Transfer Master Data to PDC system
- SAPCDT44 – To upload Time Events from the subsystem
- SAPCDT45 – To Post Personnel Time events from CC1

Time Evaluation - **RPTIME00**

- The time evaluation report *RPTIME00* is generally started as a background job once daily (usually overnight).
- Time evaluation evaluates the data of all employees whose time data was recorded completely for the previous day.
- If employees' data is changed retroactively for a period that has already been evaluated, the changes are automatically taken into account the next time the report is run after the changes.
- Time evaluation is usually run for large groups of employees. It is usual to evaluate all employees in a company in one time evaluation run
- It is also possible to run the report manually for individual employees or employee groups, or for specific evaluation periods

Time Management Status -IT0007

- *Time Management status in Infotype 0007* controls whether and how employees are processed by time evaluation.
- The status has a fundamental significance for time evaluation.

Time Mgmt Status- Use

- *Time Management status defines* WHETHER an employee's time data is
- Evaluated by *Time Evaluation*
- Passed on to *Payroll*
- Processed only by *Payroll*

Time Management statuses in the Infotype (0007)

0	• No Time Evaluation
1	• Time Evaluation(actual times)
2	• Time Evaluation (PDC)
9	• Time Evaluation(planned)
7	• Time Evaluation without Payroll integration
8	• Time Evaluation(External Services)

0-No time evaluation status

- Employees with this status are not selected for time evaluation.
- They cannot therefore be processed in time evaluation.

Time evaluation of actual times (1) and *Time Evaluation PDC (2)*

- Employees with these statuses have all their actual times, i.e., all attendance and absence data, recorded.
- It makes no difference whether attendance times are recorded at time recording terminals or in the *Attendances* infotype (2002).

Time evaluation with planned times (9)

- These employees have only the deviations from their work schedule recorded for them.
- The employees' planned working times from their personal work schedule are used as the basis for time evaluation.

Time evaluation without integration with Payroll (7)

- This status is used to run time evaluation to handle special time accounts
- EG:- to accrue absence quotas

External services (8)

- Status for external employees
- The results of time evaluation are transferred to *Materials Management* (MM-SRV), and are not passed on to Payroll.

Time Evaluation Schemas

- Which SAP standard schema you use as a model for your company-specific adjustments depends on the method of time data entry and the requirements of time evaluation
  - TM00
  - TM01
  - TM02
  - TM04
  - TQTA
  - TC00

Time Evaluation Schemas

- ***Schema TM00: Time Evaluation Using Time Events***
- Schema TM00 is a standard schema, used to evaluate employee time data that has been recorded at time recording terminals and that specifies clock times.

- ***Schema TM01: Time Evaluation for Deviations from the Work Schedule***
  - Schema TM01 is a standard schema used to evaluate the time data of employees for whom only deviations from the work schedule are recorded.

Time Evaluation Schemas

- ***TM02-Processing External Services***
- TM02 is a standard schema which has been specially customized for the purposes of evaluating external services.

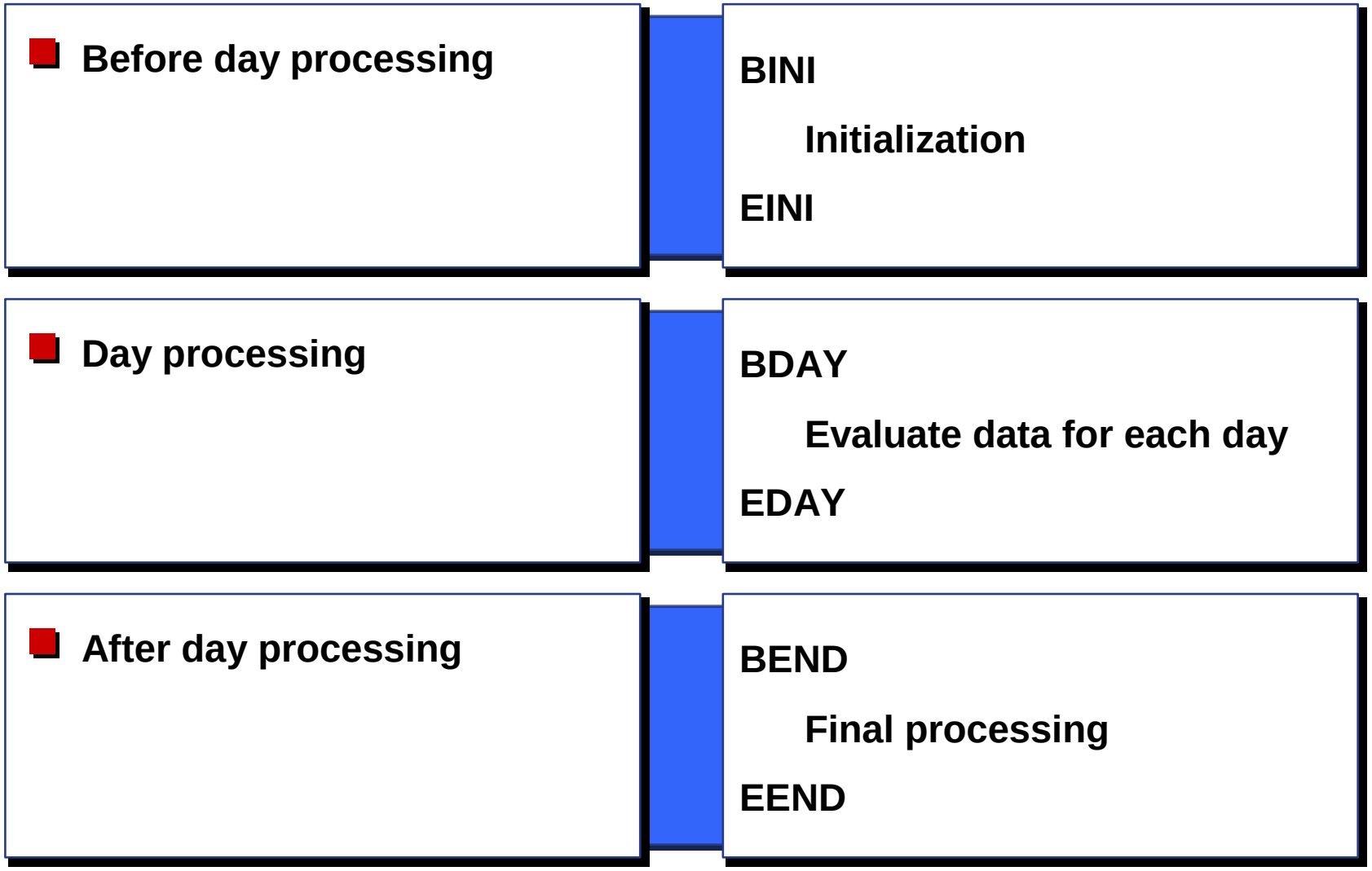
- ***TM04: Time Evaluation Without Clock Times***
- Schema TM04 is a standard schema used to evaluate employee time data that is recorded as a number of hours and not using clock times

Time Evaluation Schemas

- ***Schema TQTA: Wage Type Generation (International)***
- Used for the Generation of Absences Quota of employees and update the same in IT 2006 based on the configuration done in T559L

- ***Schema TC00: Wage Type Generation (International)***
- Schema TC00 is a standard schema used for processing time data in Payroll.

Structure of a Time Evaluation Schema



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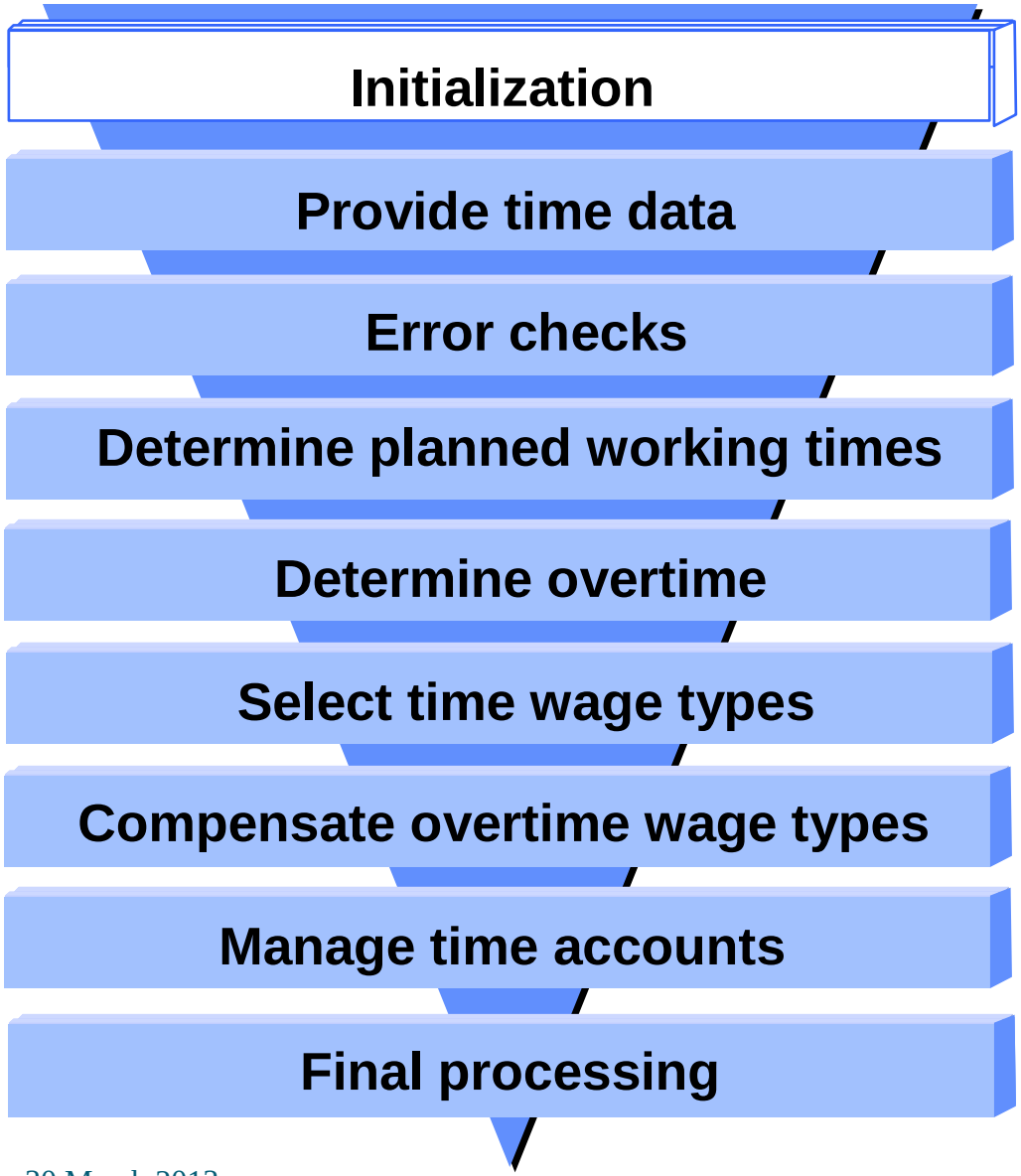
Initialization



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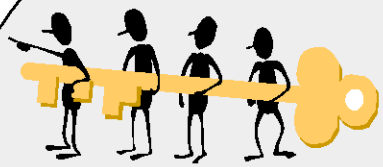
Time Evaluation Operations



Update results in table fields

Operations that perform one or more actions

Add, multiply, round values

Carry out a business process, generate a planned pair, for example

Operations for technical control

for example, branch to a personnel calculation rule

Decision operations

Retrieve and evaluate information, and update processing based on result

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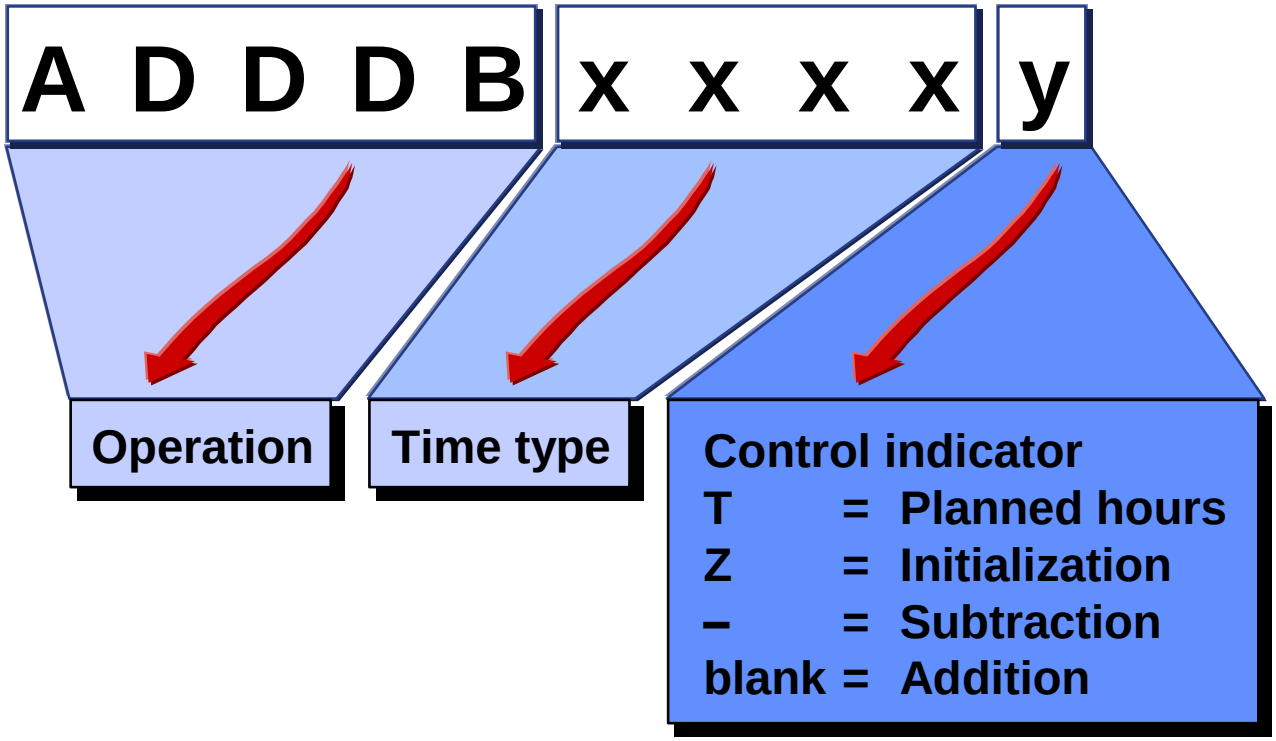
Updating Results: Operations ADD*

Operation ADDDB: Cumulation in internal table TES



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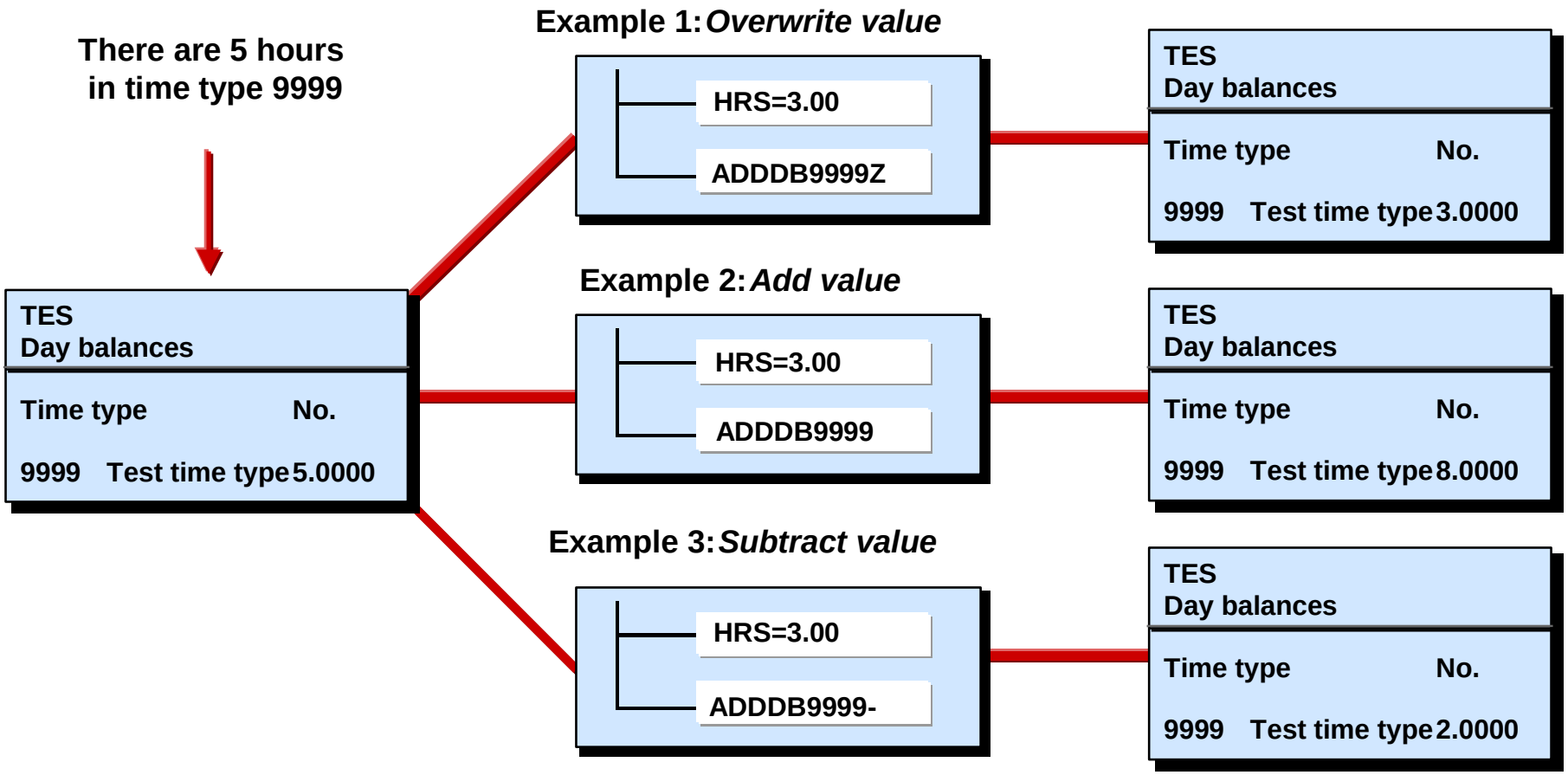
Examples of Operation ADDDB



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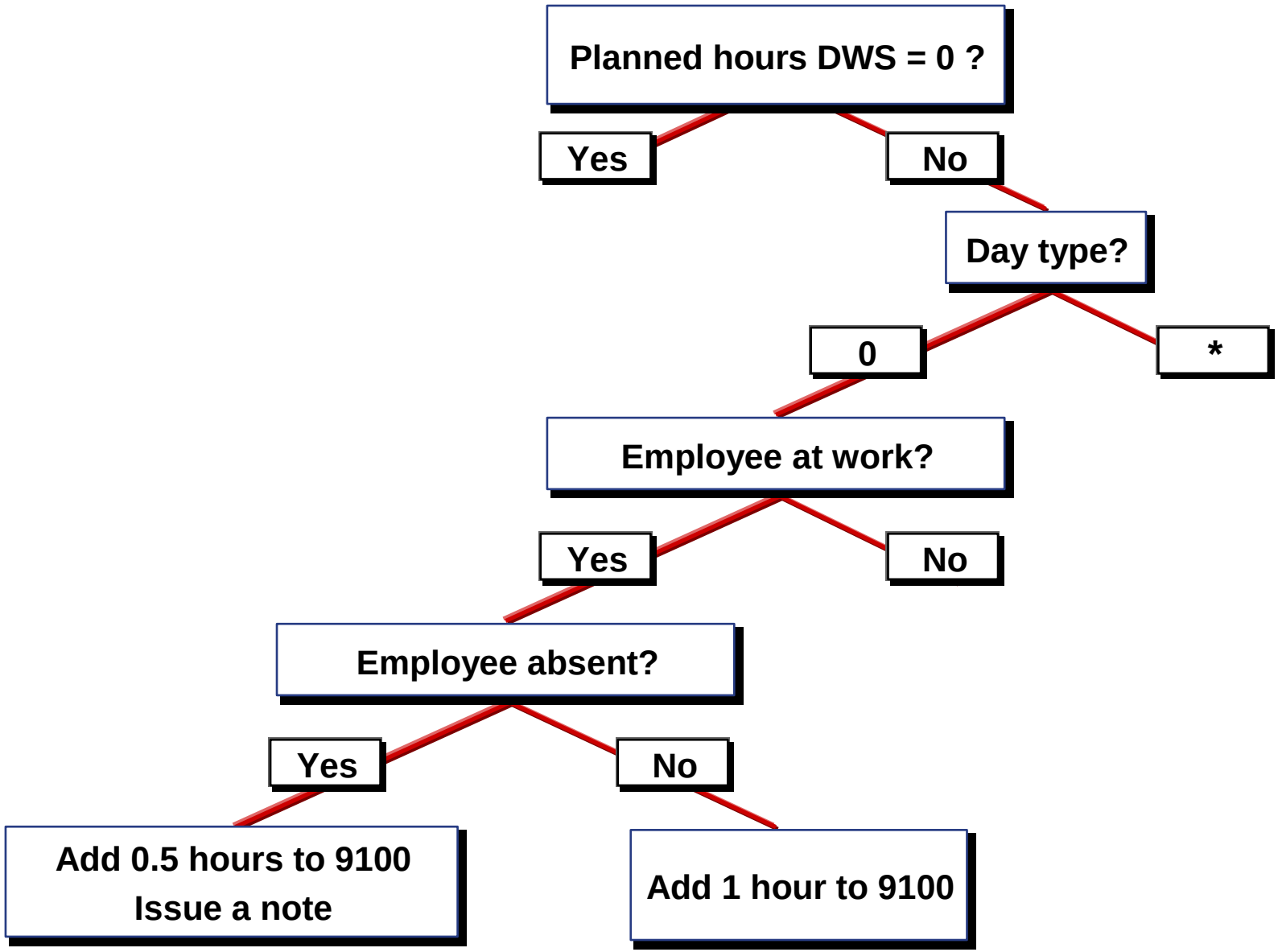
Decision Tree for Rule Z1##



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Two Important Objectives of Time Evaluation

Processing types

S - Planned work
M - Overtime
A - Absence
P - Attendance
X - Attendance on public holiday

Time wage type selection

Time wage types

Time types

- 0010 - Attendances
- 0030 - Recorded attendances from infotype 2002
- 0040 - Overtime

0050 - Productive hours

Balance formation

Balances/time accounts

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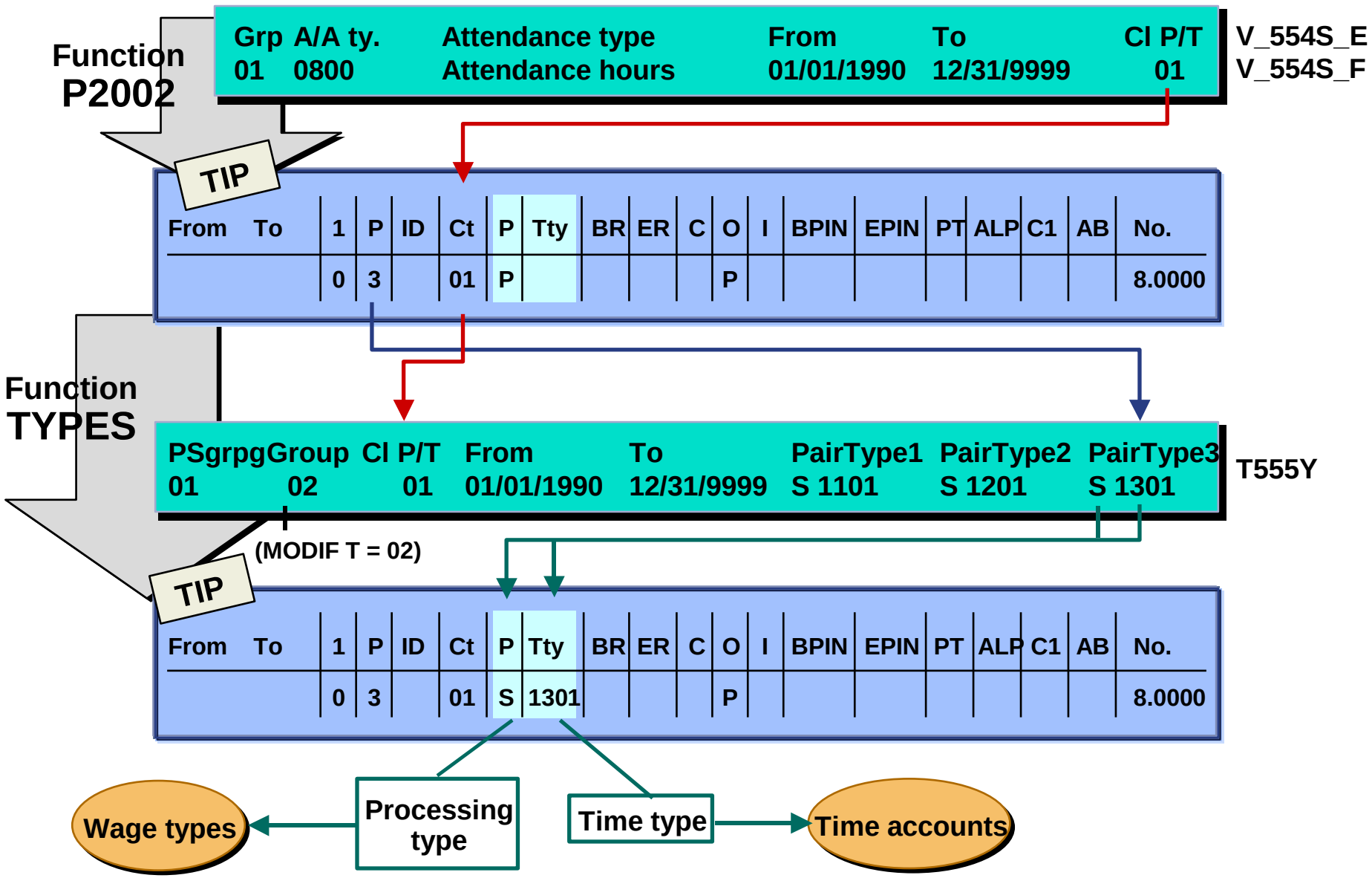
Assigning a Time Type and Processing Type



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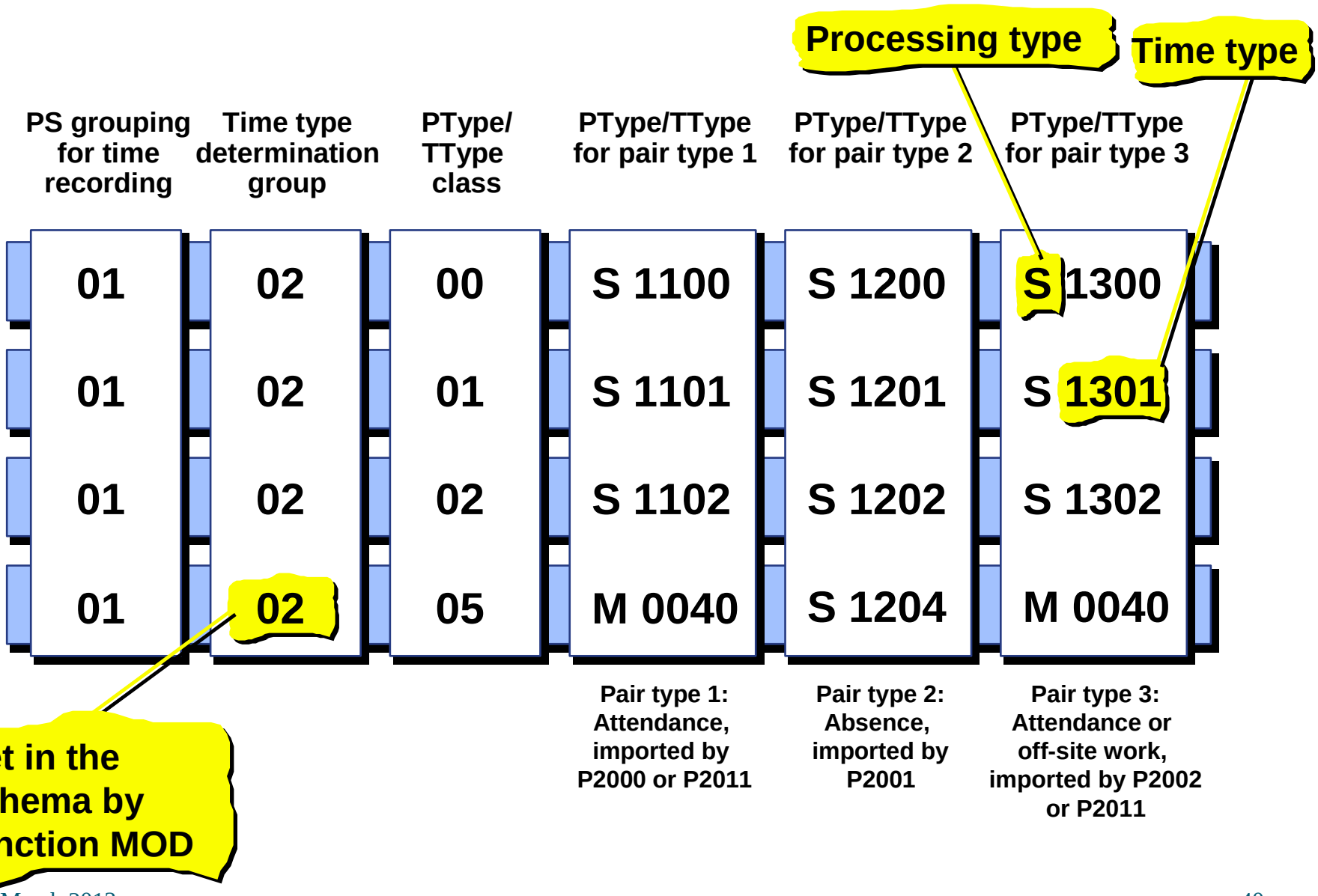
Structure of View T555Y



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Time Wage Type Selection

TIP

Start	End	Proc.type	No.
		S	4.0000
		M	2.5000

Function
Time wage type selection

GWT S DZL

GWT M ZML

Rules for selecting time wage types (V_T510S)

TIP entries for planned working times

- Hourly wage
- Bonuses

DZL

TIP entries for overtime

ZML

- Overtime wage types

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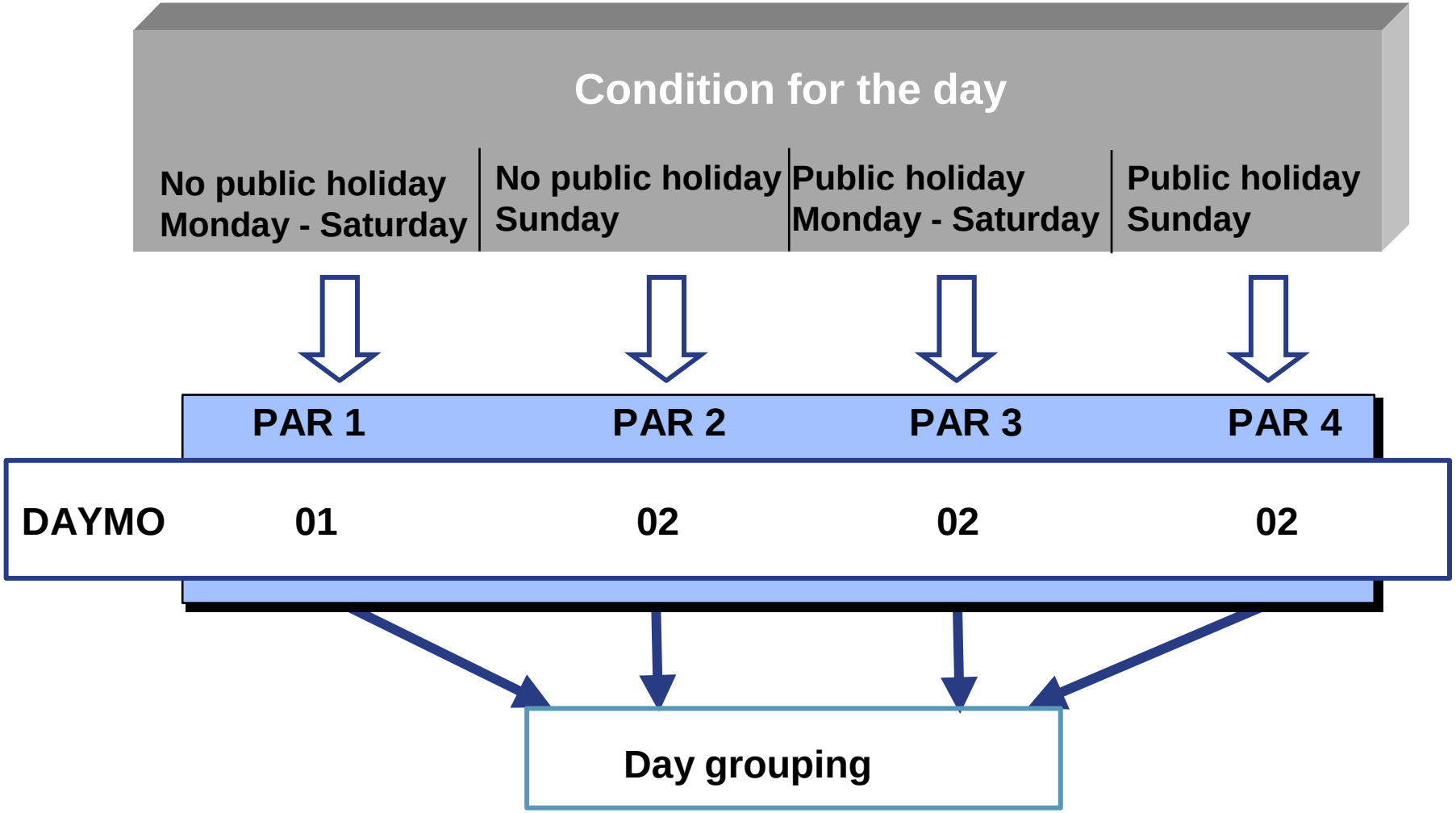
Time Wage Type Selection: Function DAYMO

Set day grouping for time wage type selection



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Principle of the Rule Group: An Example from Time Wage Type Selection

Rule group

No public holiday
Mon - Sat

Time wage type selection rule group

Day grouping

Sequential number of rules for time wage type selection

TIP

01	01	001	Normal hours	Wage type MI10
01	01	050	Overtime 25%	Rule not observed
01	01	055	Overtime 50%	Rule not observed
01	01	070	Night bonus 35%	Wage type MQ30
01	01	075	Night bonus 35%	Rule not observed
01	02	070	Night bonus 35%	
01	02	080	Sunday bonus	

STOP

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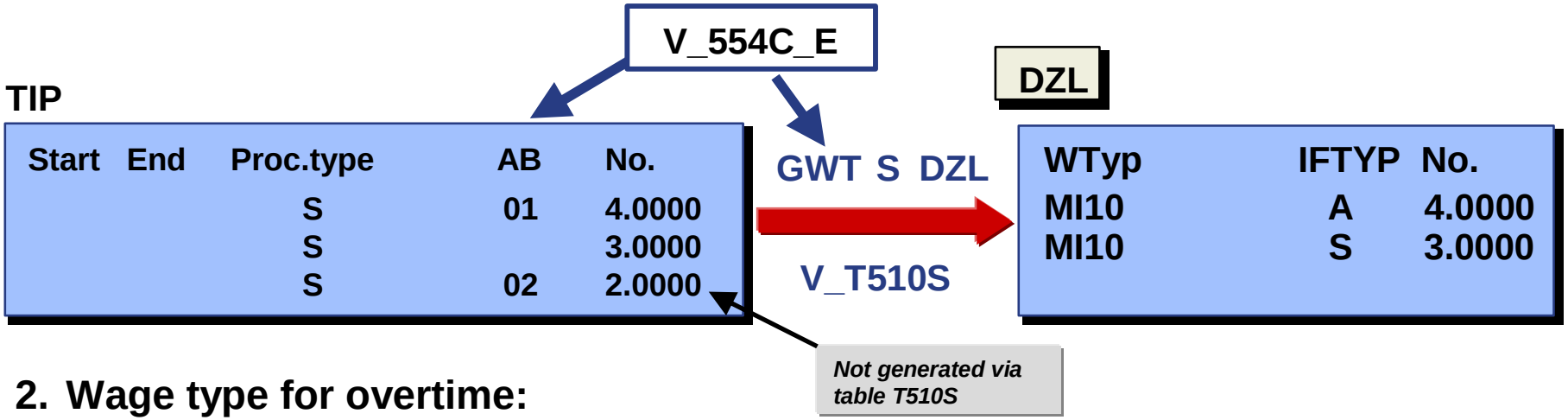
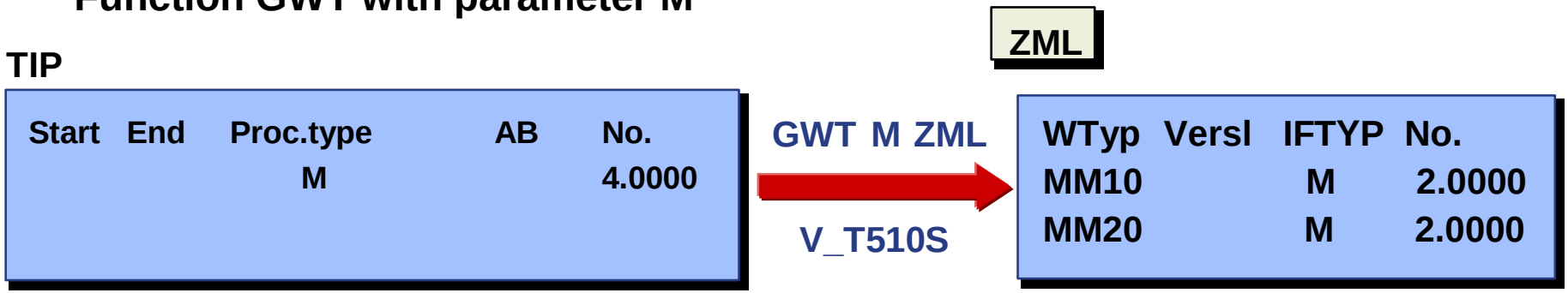
Selecting Time Types: Function GWT

Select planned and overtime wage types

1. **Wage type for planned work:**
   Function GWT with parameter S



2. **Wage type for overtime:**
   Function GWT with parameter M



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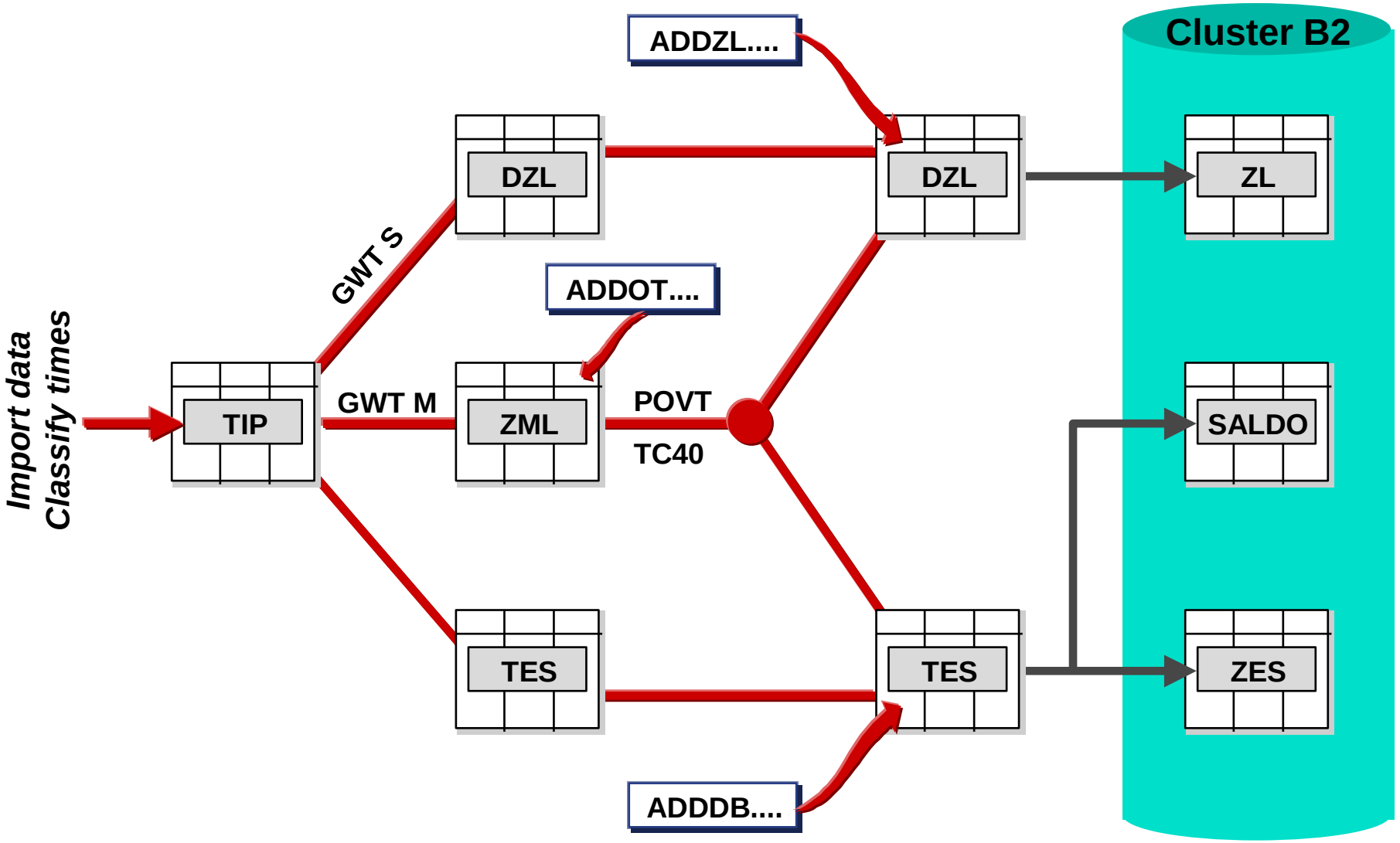
Data Flow: Time Wage Types and Balances



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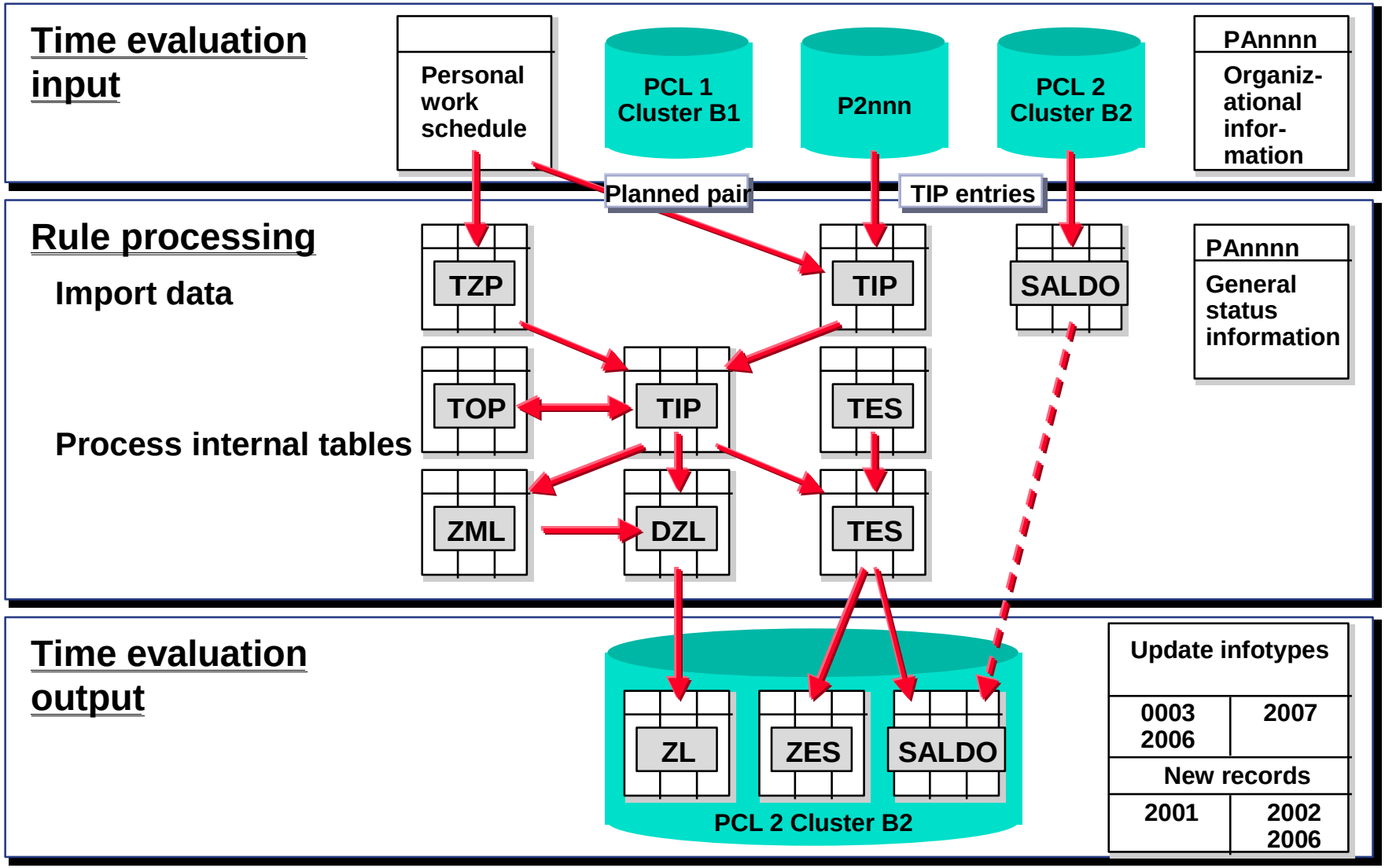
Overview: Data Flow During Time Evaluation



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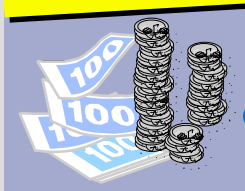
Integration Between Time Evaluation and Payroll

Third-party payroll system

Time evaluation results:

SAP Payroll



Time wage types

ZL

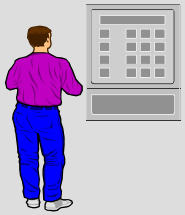
C1

ALP

Gross payroll

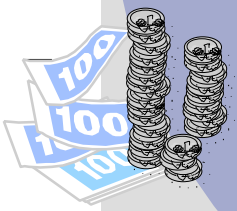
- Update time infotypes
- Messages

- Time accounts



- Link with time recording systems

Time wage types



Time evaluation not run for all days in the payroll period?

Time data processing by SAP Payroll

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Time Evaluation Period and Payroll Period

Time Evaluation	Payroll
Stored by period → Cluster B2 →	Payroll Retroactive accounting
Time evaluation period - Global setting for the evaluation of time data for all employees	**Payroll period** - Depends on payroll area
Set periods	
Time evaluation period: **= monthly**	**One payroll** - Two-weekly for all payroll areas **Several payroll periods** - Payroll area D1 : Weekly - Payroll area A2 : Two-weekly - Payroll area E2 : Monthly

Query in time evaluation schema

IF EOM ... ENDIF	If the end of the time evaluation period has been reached	IF EOP ... ENDIF	If the end of the payroll period has been reached

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