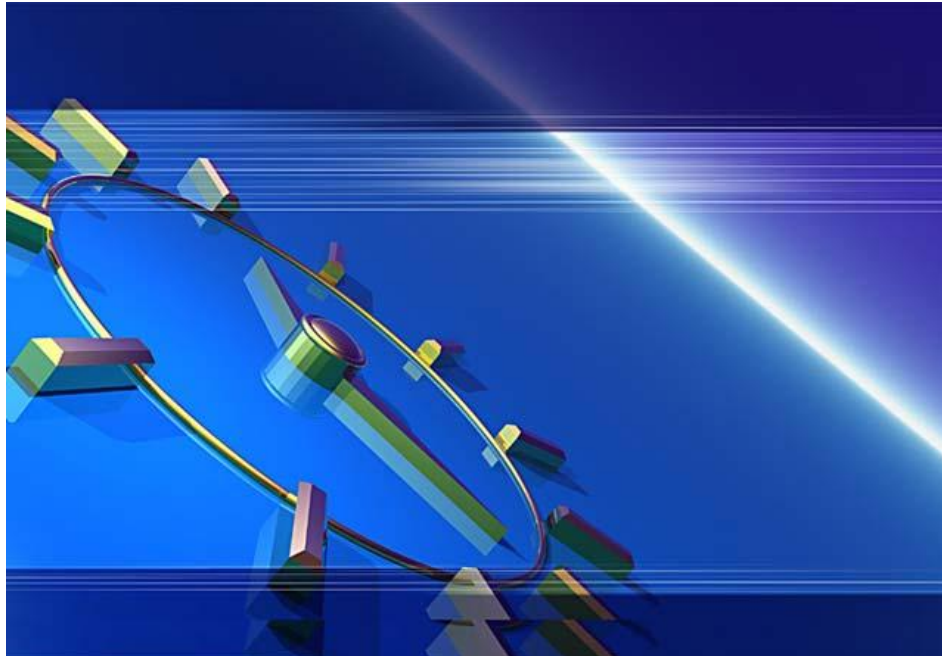


GaneTime

Time & Attendance System



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Introduction

Gane International Limited was formed in 1986 to specialise in high performance systems using new technology and combining the skills of a number of specialists. Gane have particular expertise in the area of 'Resource Management' and this has resulted in the development of GaneTime, a unique solution to Time & Attendance problems. GaneTime is the result of many man years of expertise in both the computer industry and the design and implementation of computerised Time & Attendance systems.

As a company we do not simply offer a package solution, instead we prefer to become an integral part of the design and development of a solution that will meet your requirements both now and into the future.

The primary function of GaneTime is to record the hours of attendance of employees with differing work patterns and compare these with the expected attendance over the same period. This information can then be authorised and subsequently transferred to the company payroll. This transfer can be to any payroll system, on any computer.

GaneTime is far more than a Time & Attendance system, it is a management tool designed to help increase productivity and efficient control of staff by measuring attendance performance against the existing working practices of the client.

The software has been designed to handle large volumes of data, support many users and has been written without significant volume limitations, therefore the capacities of the system are only limited by the chosen hardware platform. As system capacities start to be reached, or system performance drops due to an increased number of users or volumes of data, it is relatively simple to upgrade the hardware to handle the increased requirements.

The flexibility of current computer systems underlines the communications and networking abilities of GaneTime, which can be linked to most systems, providing a suitable data transfer mechanism can be established. Standard import and export routines exist and these can be readily customised to meet with the exact requirements of the client. All output from the system can be routed to an intermediate ASCII file, which is transferable between multiple software and hardware platforms, allowing GaneTime to import from and export to other systems with relative ease.

Because GaneTime operates in a real time environment, information is available immediately. Where communications between the data collections units and the central processor are temporarily inoperable, the units will store all data until such time as communication with the central processor is re-established. The information is then passed to GaneTime for processing. Reports and enquiries therefore provide a comprehensive, accurate and up to date picture.

Time & Attendance systems must be able to manipulate employee clockings by adjusting their actual clocking times, taking the adjusted time and placing it in the correct position within the days expected working pattern, record any absences and calculate the number of hours worked at a number of differing pay rates. With the unique concept of our own Time & Attendance "Rules Language", we believe GaneTime to be one of the most comprehensive, flexible and easy to use Time & Attendance systems on the market. The Rules are the key to providing the client with a system that fits their requirements perfectly, without the client having to change their standards or procedures.

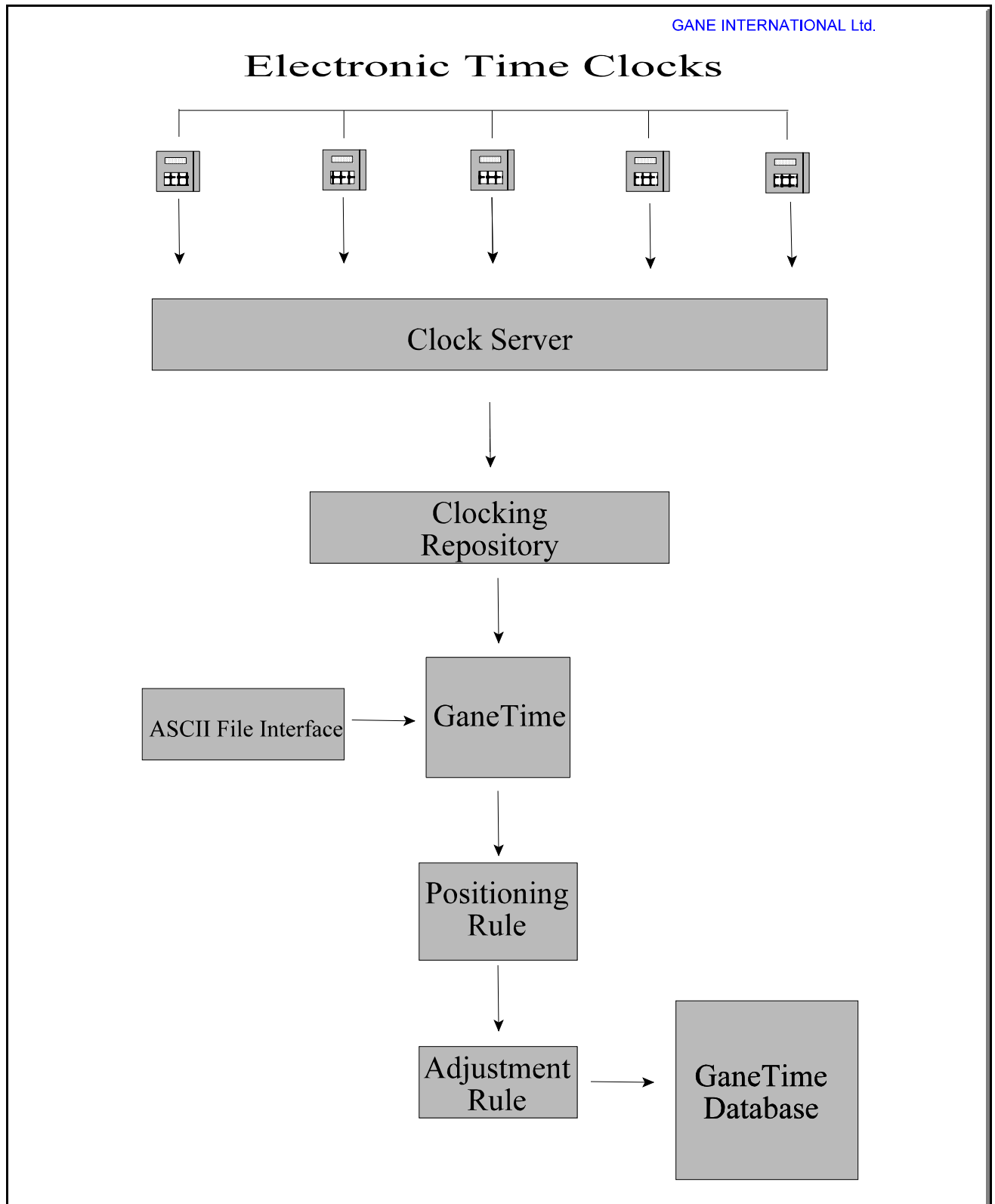


Figure 1 - How GaneTime Handles An Actual Clocking

GANE INTERNATIONAL Ltd.

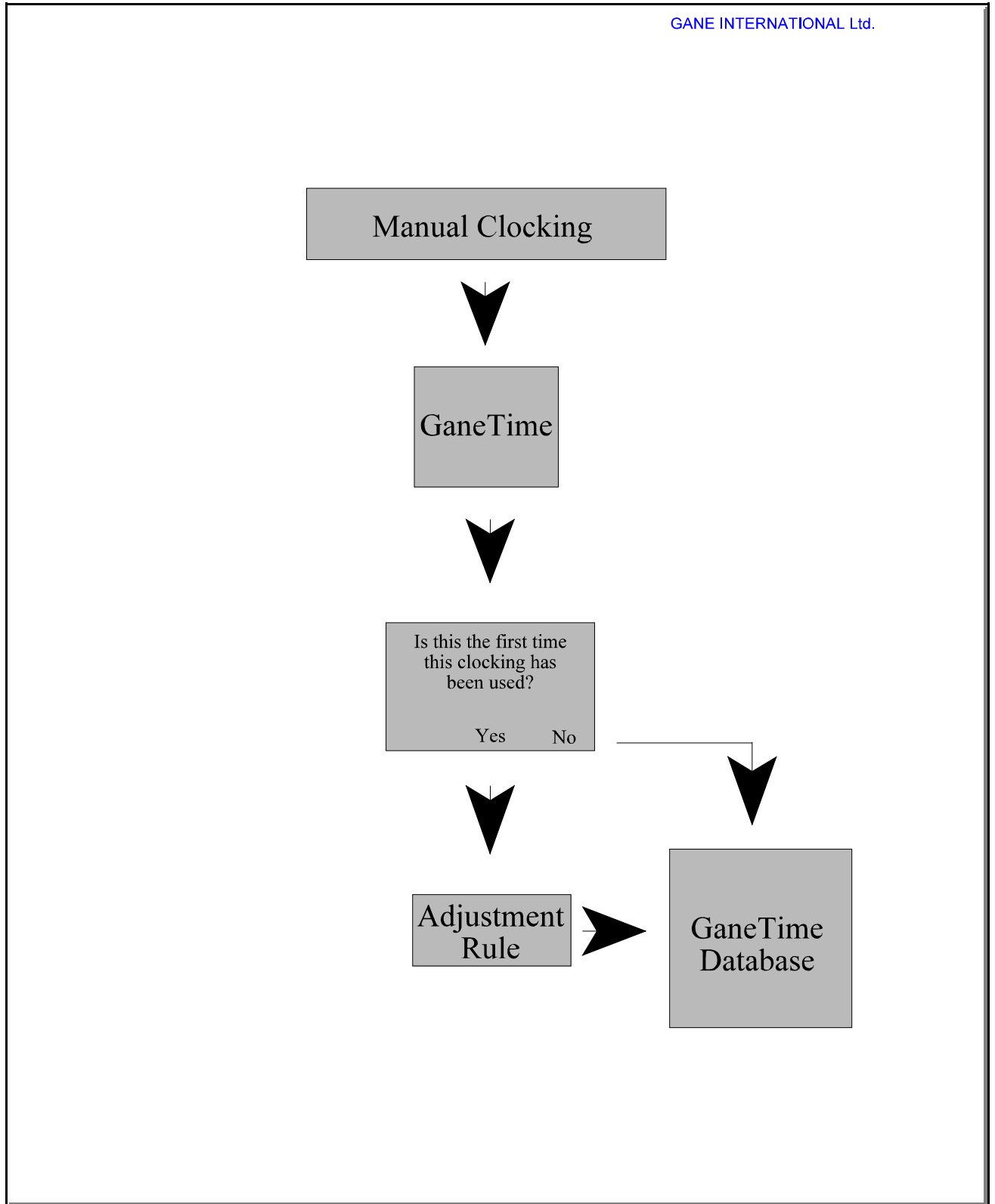


Figure 2 - How GaneTime Handles A Manual Clocking

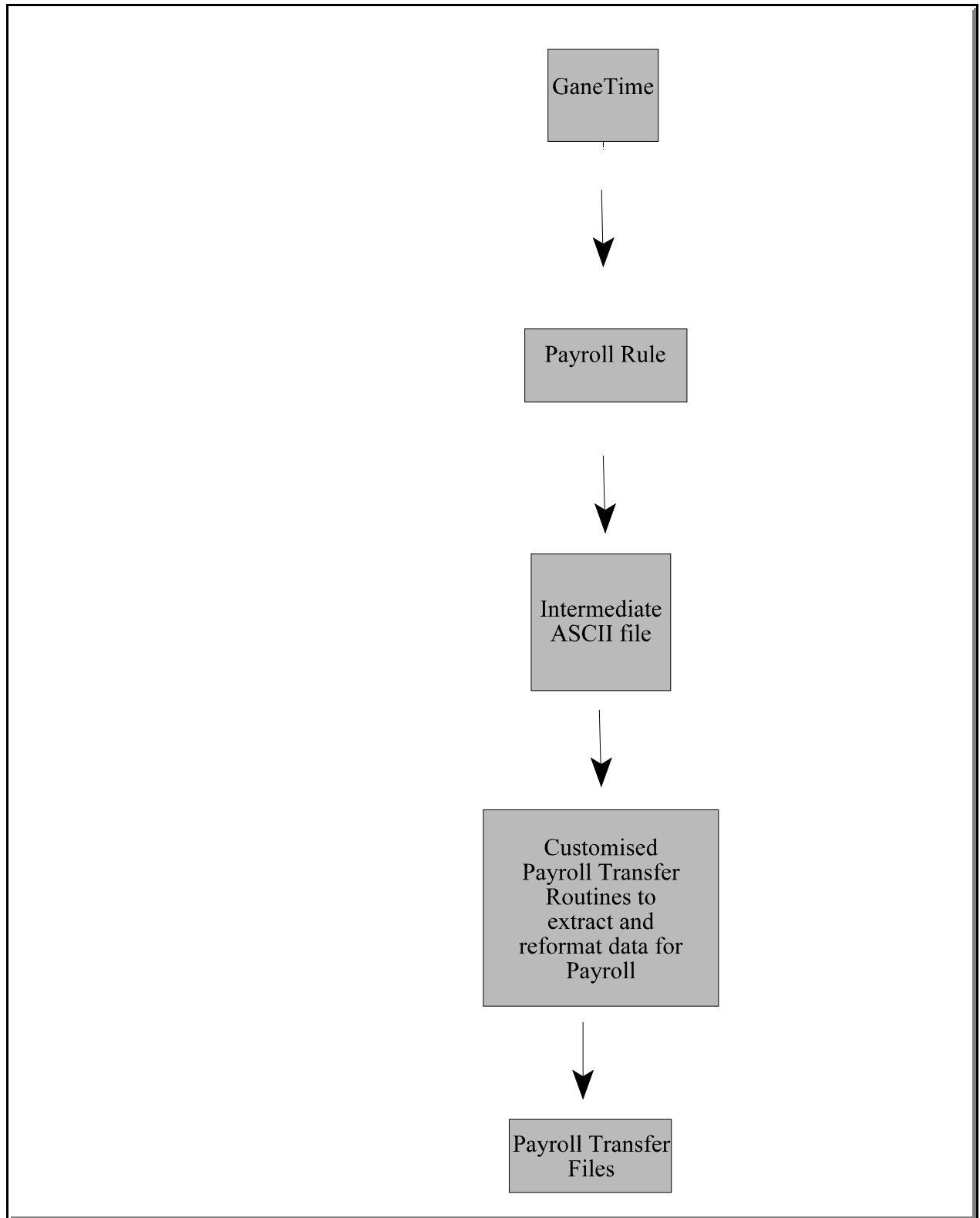


Figure 3 - How GaneTime Handles A Payroll Transfer

Summary of Software Features

- GaneTime can support an unlimited number of employees.
- GaneTime also supports up to:
 - 7,000 Absence Codes
 - 50 Year Shift Pattern
 - 256 Time Clocks
 - 16 Expected Clockings/Employee/Shift
- Database runs on **UNIX** or **LINUX** based server therefore proven, reliable and fast.
- Supports most Electronic Time Clocks and Badge Technologies.
- Supports any complexity of work patterns including Flexitime.
- **Rules** which allow the system to be 'tailored' to unique requirements.
- Working Time Directive reporting.
- User definable **Analysis Codes** and **Absence Codes** allow flexible definition of employees and absences.
- Labour Allocation and Job Costing.
- Interfacing to most Payroll Systems.
- User definable allowances cater for sundry payroll payments.
- Import/Export facility permits data transfers to other systems such as Personnel or Access Control.
- Reports can be viewed on-screen and submitted on a timed basis.
- Context Sensitive On-line Help and User Manual.
- Operator Security.
- Comprehensive auditing with "on-screen" and hard copy reports of planned, current and history attendance information.
- Can be fully integrated with **GaneEntry**, our Access Control system or linked to other Access Control Systems.

Optional Features

- Multi-Lingual support.
- Full Crash Recovery.
- Options to drive external Bells, Buzzers.
- Optional external Time Synchronisation module.
- Optional use of Informix SQL to allow user defined ad-hoc reporting and enquiries.

To ensure that the time used by the system is accurate, **GaneTime** has an optional external synchronisation module which will establish the exact time of day from an external source such as the Rugby MSF Atomic Time Clock.

Another optional facility can drive an external clock or site siren from the host computer, thus enabling the user to have an 'official clock'.

Foreign language versions of **GaneTime** are also available, with facilities to select your choice of language either at each terminal or for each specific user, using the optional Multiple Language Support module.

Time Clocks and Clockings

GaneTime validates the actual clocking movements of employees against their expected times and provides comprehensive auditing, together with user friendly screen enquiries and reporting.

Gane International manufacture their own range of time clocks and readers. These are specifically designed to take advantage of the power and flexibility inherent within the GaneTime software. Electronic time clocks and readers from other manufacturers are also supported by GaneTime and the system is designed in a modular form to allow for electronic time clocks from different manufacturers (or different models from the same manufacturer) to be implemented within the same system.

Many different reader models are currently supported and the user can clock in or out without regard to the 'direction' of the clocking (ie: IN or OUT). This is achieved by specifying rules to GaneTime during system installation that allow the software to determine the 'direction' of a clocking. If a clock has the ability to specify the 'direction' of the clocking, GaneTime will allow this facility to be enabled or disabled for each clock on the system.

Any clocking that is rejected or overridden by the system is automatically logged to an Audit File. This is another of the advantages of GaneTime in that no matter what the system rejects as invalid or inaccurate, a comprehensive audit trail is kept to provide a history of those operations that failed to meet the criteria specified by the user.

There are a number of different ways to connect time clocks to the GaneTime server. These include, but are not limited to, direct connect, local or wide area network, land line modem and "wireless" connection. As with types of clocks, different types of connection can be used within the same installation and this will depend very much on the customer's infrastructure.

Gane's approach to the capturing of data from time clocks and readers is cost effective and ensures that the highest possible system resilience is obtained.



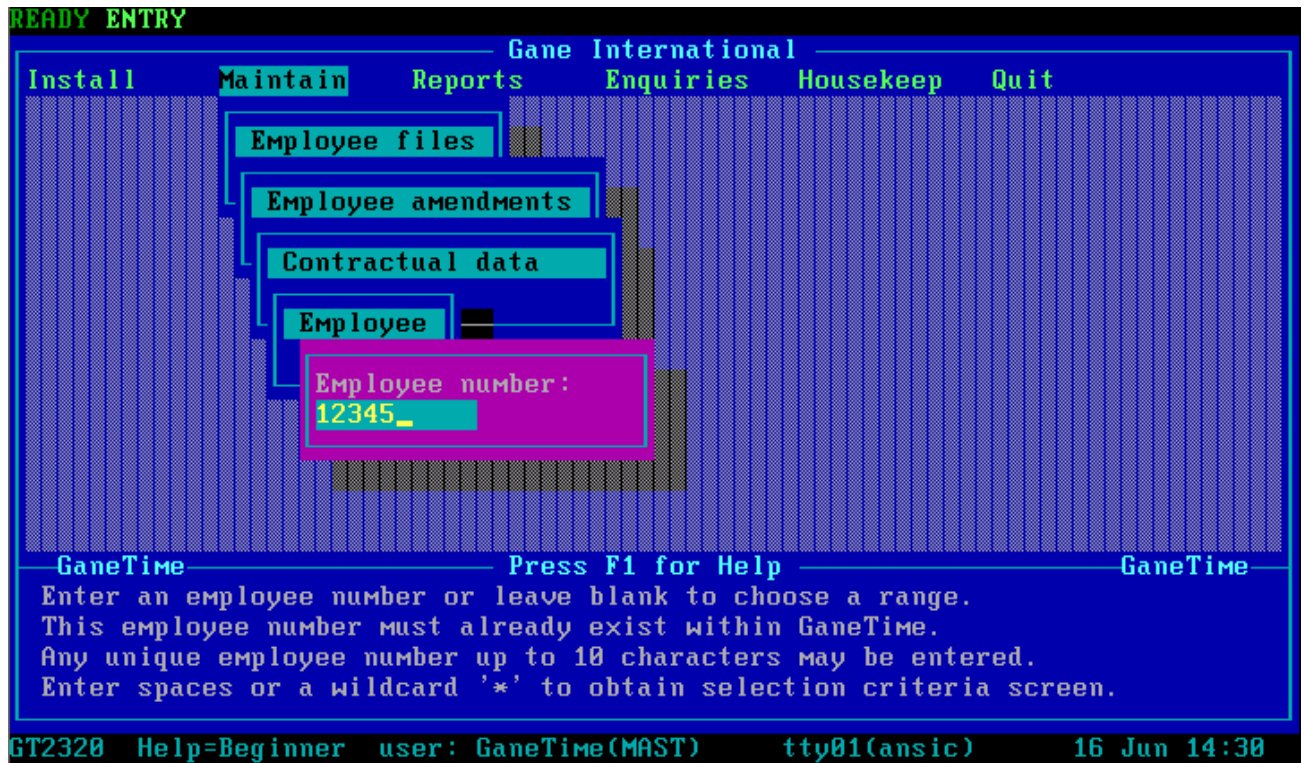
System Security

Because of the number of diverse ways in which GaneTime can be accessed, system security is a very important consideration.

The selection of Menu Options at each terminal is controlled by 'User Groups'. Potential users of the system must first be identified and given a user name and password. The system administrator adds users to the system, maintains them and determines the 'User Group' for each user. This 'User Group' will identify the role of the user within the system and consequently the menu options available to that user. For example a user group name of 'TIME' could be used to identify Time Clerks who may be restricted to certain specific Menu Options. Each menu option has a set of 'Permissions' which allow or prevent the selection of the option for each 'User Group'.

To further promote terminal security, when a user is logged onto the system and does not press a key on the keyboard for a period of time, GaneTime will automatically cancel any incomplete operation and log the user off. This period is user definable for each terminal as a value between 1 and 9 minutes, although the user can also choose not to use this feature on some or all terminals.

To ensure integrity of the GaneTime database, the system has a comprehensive data backup and restore facility. The appropriate backup regime will vary from client to client and defining this procedure will be part of the detailed system design process.



Pull-Down Menus

As shown in the standard GaneTime menu above, all menus operate from a menu bar located across the top of the screen. Selection of top-level menu items is performed by utilising the cursor left and right keys (← →), while selection of sub-menu items is performed using the cursor up and down keys (↑ ↓).

Each time you select a menu item, that item is highlighted and moved to the top of the menu, while the next sub-menu is placed directly underneath. This gives the user a clear menu path, which is useful if called away from the screen for a period of time.

In addition, two function keys help to quickly navigate the menus: the F3 (Exit) and F4 (MetaExit) keys. The F3 key exits the current function, moving up to the next menu level. The F4 key will move you directly to the top menu level.

```

READY ENTRY
1 2 3 4 5
Gane International
AMEND CONTRACTUAL DETAILS

Employee Number 1001 Starting Date Mon 2 /2 /2004
Employment Starting Date Mon 02/02/2004
Title Mr First Name(s) Paul Surname Armitage

Company Gane Gane International
Department Sales Sales
Trade prog Programmer
Employee Type sta Staff

PIN : Unallocated
Clocker Yes BadgeHolder Group :
Special Indicator 2 No Zone : Onsite 18/03/2004
Special Indicator 3 No Muster Zone :
Special Indicator 4 No Badge Number : Badge Not Issued

GaneTime Press F1 for Help GaneTime
The commencement date of the employee with GaneTime.
The employee will not be permitted to clock in or out until this date.
This date must not be earlier than the employee's commencement of employment

Paul Armitage left on Thu 18 Mar 2004
GT2321 Help=Beginner user: GaneTime(MAST) tty01(ansic) 16 Jun 15:09

```

Employees

Each employee for whom Time & Attendance information is to be recorded is issued with a unique badge that identifies the employee to GaneTime. Employees are stored within the system together with nine user definable **Analysis Codes**, for example 'Department' or 'Trade'. In addition to this, each employee has nine **Special Indicators** which will have a value of either Yes or No. Like the **Analysis Codes** these also have user definable titles attached to them, allowing the client to report on employees who are, for example, qualified to carry out first aid. All reports, enquiries and amendments throughout the system can be implemented using either a specific employee or by selecting employees based on any combination of one or more of these **Analysis Codes** and **Special Indicators**.

GaneTime stores information based on daily work patterns. The user can specify the maximum period for which the system should store both 'Attendance' information and 'Time' information, after which this data will be automatically deleted as part of the standard system Housekeeping. 'Attendance' information is regarded as Holidays, Sickness, Lateness and other absences. 'Time' information on the other hand are the specific hours that an employee has clocked per shift. Both these periods are 'Rolling Periods' which are maintained by the system automatically, as records become older than the maximum history period specified, they are removed from the system.

```

READY ENTRY
Gane International
DAILY CLOCKING TIMES
Mr Chris Dearden
Employee Number: 1002

Shift Name      Day      Date      IN      OUT      IN      OUT
*LBdays *0800-1700 Thursday 18/3/2004 8:00 17:00
           0800-1700 Friday 19/03/2004 8:00 17:00
           rest Saturday 20/03/2004
           rest Sunday 21/03/2004
           0800-1700 Monday 22/03/2004 8:00 17:00
           0800-1700 Tuesday 23/03/2004 8:00 17:00
           0800-1700 Wednesday 24/03/2004 8:00 17:00
           0800-1700 Thursday 25/03/2004 8:00 17:00
           0800-1700 Friday 26/03/2004 8:00 17:00
           rest Saturday 27/03/2004

GaneTime Press F1 for Help GaneTime
Move the cursor up or down to the date required ...
OR enter a SPECIFIC date within the pattern.
The employee's contractual pattern will be displayed around the date.

GT441 Help=Beginner user: GaneTime(MAST) tty01(ansic) 16 Jun 15:18

```

Work Patterns

GaneTime is divided into daily working patterns which relate to a specific period of attendance over a 24 hour period. The system will permit the entry of a daily shift pattern which spans midnight and will attribute this shift to the day in which the shift begins.

A day within the system is defined as a 24 hour period beginning at midnight. The user may define clock times in either 24 hour or 12 hour format in the 00:00 (12:00a) to 23:59 (11:59p). Dates within the system can also be specified in European or American formats, for example the 20th June 2002 may be expressed as either 20/06/2002 or 06/20/2002. The user can also specify the day of the week that is regarded as the start of the week (i.e. 'Day 1') but it must be stressed that this will have no bearing on the end of the pay periods, which are defined separately.

Any number of daily work patterns may be defined, each of which may apply to one or more employees. Daily work patterns are then grouped together to provide a 'Group' which covers a number of days, for example weekly or monthly groups. One or more of these 'Groups' are then combined to form a shift pattern.

Each employee is defined to the system with a maximum number of expected clock entries per shift. This may be any even number between 2 and 16 inclusive. Each of the these clockings is also specified as either an enforced or a non-enforced clocking. Those clockings that are enforced **MUST** be clocked by the employee whilst those with non-enforced will be assumed by GaneTime if they are not actually clocked.

```

READY ENTRY
Gane International
EMPLOYEE AUTHORISED HOURS MAINTENANCE DATE SELECTION
Employee : 1002 Mr Chris Dearden

```

Day	Date	Clocking Totals			Booked Absences
		Ctrct	Auth	Actual	
Tuesday	02/03/2004	9:00			9:00
Wednesday	03/03/2004	9:00			9:00
Thursday	04/03/2004	9:00			9:00
Friday	05/03/2004	9:00			9:00
Saturday	06/03/2004				
Sunday	07/03/2004				
Monday	08/03/2004	9:00			9:00
Tuesday	09/03/2004	9:00	11:00		11:00
Wednesday	10/03/2004	9:00			9:00
Thursday	11/03/2004	9:00			9:00

GaneTime Press F1 for Help GaneTime
Move the cursor or type date to select date required.
Cutoff points for dates available are indicated on the left of the screen.
Only dates within this range are available to this function.
Use of the HOME key will return the cursor to "today's" date

```

GTattd Help=Beginner user: GaneTime(MAST) tty01(ansic) 16 Jun 15:25

```

Contracted, Authorised, Actual and Adjusted Times

(i) Contracted Time

This is the time that GaneTime would normally expect an employee to clock based on the employee's work pattern. If an employee is on a rest day, then the contracted times will appear blank.

(ii) Authorised Time

This is an amended expected time to the employees normal contracted time. It is therefore possible to authorise an employee to attend before or after his usual contracted time. This authorization can take place either before or after the event, as required by the client, and is the method generally used for authorising paid overtime worked by an employee, or a group of employees.

(iii) Actual Time

This is the actual time the employee swiped their badge through a clocking terminal and is retained as a record of the actual time that the employee clocked in or out.

(iv) Adjusted Time

This is the clock time, after any adjustments have been made for any grace period or quartering. An employee may be allowed to clock up to a number of minutes later than the expected clock IN time, or earlier than the expected clock OUT time, and still not be penalised. Adjusted time may also typically be rounded to the nearest quarter of an hour. It is this time, not the actual time above, which is then used for payroll purposes. It is possible to have different grace periods and adjustments for an employee, or groups of employees, within the same system.

Examples of the four clock times

The following table of example Clock IN times are all based on a three minute grace period, ie: the employee is allowed to clock IN up to three minutes late without penalty. All clock times are also to be rounded to the quarter hour for later use by the payroll :

	Contracted	Authorised	Actual	Adjusted
a	09:00		09:02	09:00
b	09:00		09:04	09:15
c	09:00		08:57	09:00
d	09:00		07:31	07:30
e	09:00	07:30	07:31	07:30
f	09:00	07:30	07:34	07:45
g	09:00	07:30	07:28	07:30
h	09:00	07:30	09:03	09:00

Table 1 - Clock Times

It is important to note that in examples (d) and (h) of Table 1 above, the adjusted time will apply grace periods and adjustment as normal, irrespective of the expected (authorised) start time. This allows a supervisor to authorise the exception at a later date. Please also note that no mention is made in Table 1 above of "Paid Hours", only of actual attendance and expected attendance. This is because GaneTime uses the configurable Payroll Rule to interpret the clock times for paid hours, and normally, subject of course to the clients actual requirements, the Rules would only credit an employee for authorised attendance. In examples (d) and (h) the employee would normally be paid from 09:00, although in example (d) the early start time of 07:30 could be authorised later but would not be credited as paid hours until authorised. In example (h) the employee was "late" for the expected (authorised) start time, and would, therefore, only be paid from 9:00.

```

READY ENTRY  CHANGED
                Gane International
                TEXT CODE FILE MAINTENANCE

Code prefix : 98   Absence Records
Code value  : AH
Code text   : Annual Holiday
Indicators  :

                Paid ?                Yes
                Allowed to clock ?    No
                Update Holiday Entitlement ? Yes
                Update Sickness Allowance ? No
                Statutory Holiday ?   No

-----GaneTime----- Press F1 for Help -----GaneTime
The text description which relates to the Code Prefix and Value above.
Clearing this description will upon committal allow deletion of a Text Code.
Certain Text Codes are non-deletable. Code prefixes 99 & 98 are examples.

Gcode  Help=Beginner  user: GaneTime(MAST)  tty01(ansic)  16 Jun 15:33

```

Absence Codes

Holidays and other absences are defined to GaneTime using **Absence Codes**. These are defined by the user and stored together with a 20 character text description of the absence. Any two character absence code can be defined and each is configured with five special indicators:

- | | | |
|---|--|-----------|
| 1 | The absence is either a paid absence or credits the employees Flexitime record. | Yes or No |
| 2 | Employee is still allowed to clock in or out over a time period specified with this absence code. | Yes or No |
| 3 | The absence should be counted against the employees annual holiday entitlement. | Yes or No |
| 4 | The absence should be counted against the employees annual sickness allowance. | Yes or No |
| 5 | The absence defines a description of a day on which Statutory Holiday rules apply. (Used to describe days held in the GaneTime Calendar File). | Yes or No |

```

READY ENTRY
1 2 3 4
Gane International
EMPLOYEE ADVANCE BOOKING - CONTRACTUAL DETAILS

Employee Number 1002      Mr Chris Dearden

Schemes: Overtime 2      Flexitime 0      Premium Hours 0
Pay Period Type W7      Next Pay Period End : 18/06/2004
Lateness code : LT      Unspecified Absence : ??
                        Default Absence : UA
Max Clockings/Shift: 2      Shift Pattern Name : LBdays
Adjust for B S T : No      Permitted Clocks :

Enforced Clockings :
  1st      2nd      3rd      4th      5th      6th      7th      8th
  IN OUT  IN OUT  IN OUT  IN OUT  IN OUT  IN OUT  IN OUT  IN OUT
  Yes Yes

GaneTime Press F1 for Help GaneTime
The scheme number of the overtime rules for this employee.

GT2332 Help=Beginner user: GaneTime(MAST) tty01(ansic) 16 Jun 15:39
    
```

Following our philosophy of maintaining data by exception only, each employee has "default" absence and lateness codes defined. This allows the user to only have to maintain absences where the expected norm for an absence did not occur. For example, if an employee arrives for work later than expected, then the period from when expected to the employees actual arrival time is classed as lateness. If the client takes no further action then this lateness will be attributed to whatever the default lateness code is for that employee. This, of course, could be paid or unpaid, depending on the employee and the client's policy.

GaneTime also supports the concept of "passouts". These "unexpected" periods of absence, where the employee runs an errand for example, can be separately classified for each employee with a default absence code defined for each employee.

```

READY          PREU          1 2 3 4          NEXT
-----
Gane International
EMPLOYEE EXCEPTIONS SCREEN

Number      Surname      Date      Exception      Detail
1801      Armitage      02/02/2004  ?? ABSENCE      8:00-17:00
           03/02/2004  ?? ABSENCE      8:00-17:00
           04/02/2004  ?? ABSENCE      8:00-17:00
           05/02/2004  ?? ABSENCE      8:00-17:00
           06/02/2004  ?? ABSENCE      8:00-17:00
           07/02/2004  Not Ctrctd
           08/02/2004  Not Ctrctd
           09/02/2004  ?? ABSENCE      8:00-17:00
1802      Dearden      02/02/2004  ?? ABSENCE      8:00-17:00
           03/02/2004  ?? ABSENCE      8:00-17:00
           04/02/2004  ?? ABSENCE      8:00-17:00
           05/02/2004  ?? ABSENCE      8:00-17:00

-----
GaneTime          Press F1 for Help          GaneTime
The type of this exception.
This employee's records are not currently modifiable.
This exception has not yet been resolved.
Return to this line later if further changes are required.
3 employees selected
GTex1  Help=Beginner  user: GaneTime(MAST)  tty01(ansic)  16 Jun 15:42

```

Exceptions

GaneTime defines exceptions as events which take place and differ from the expected actions for an employee, leaving work early for example. GaneTime provides a comprehensive user interface which allows the user to manage and resolve exceptions. GaneTime supports all exceptions which are used when building the Exception Processing Maintenance Screen.

GaneTime supports the following exceptions

<u>Exception</u>	<u>Description</u>
Unauthorised Overtime	On a contracted day an employee works longer then they are contacted.
Missed IN/OUT Clockings	An employee is expected to clock IN or OUT and fails to do so.
Unspecified Absence	An employee is expected to attend for a period of time and does not attend for the whole period.
Unexpected Presence	When an employee is not contracted to attend, but clocks in and out.
Early Leaving	When an employee leaves prior to the end of the shift.
Short Absence	An employee is expected to attend for a period of time and is absent for a time within that period.
Unauthorised Overtime on Booked Absence	When an employee works beyond their normal contracted hours, but they also have an absence booked which covers the period of overtime.

GaneTime Rules

The GaneTime system is designed to be tailored to the unique requirements of each user and this is achieved by using Rules. These are written using a special language that has been designed specifically for this purpose. The Rules define the way in which clockings are to be interpreted and specify how the system should react to certain circumstances. Examples of this could be the way in which the maximum period of earliness may be defined for specific departments or allowing certain groups of employees (as defined by Analysis Codes and Special Indicators described earlier) different grace times. Specific rules for positioning clock times can also be applied to the system.

What are GaneTime Rules?

The GaneTime Rules allow the client to specify precisely the action(s) to be taken when processing clockings from an employee. Additionally, when the resultant data is made available to Payroll, a further set of Rules allocate an employee's authorised attendance into up to 99 different pay rate categories and 99 different premium rates. The Rules are written in a language developed by Gane and can be either maintained by Gane or the client, with suitable training. Gane include within the cost of the standard software license, a number of days for the writing of the initial set of rules to the client's specification. An understanding of the workings of the GaneTime Rules highlights one of the most flexible aspects of GaneTime. We believe this concept to be unique to GaneTime.

The Three Main GaneTime Rules

(a) The Positioning Rule

The Positioning Rule simply determines which position to place the received clocking within that current daily pattern: for example, as shown in Table 2, an employee was contracted to clock IN at 09:00 and contracted to clock OUT at 12:00, and actually clocked IN at 10:34. How does GaneTime decide where to place this clocking?

The Positioning Rule may be configured (depending on the clients exact requirements) to check if there is an actual clocking in the first position. If there is, then the 10:34 clocking must be a clock out and will be placed in the second position for the day. The fact that the employee has clocked out early will be audited. Alternatively, the client may set a boundary around a clock IN and the following clock OUT. For example, any clocking received before 11:00 will be classified as a clock IN and everything up to 12:30 will be classified as a clock OUT. Therefore, in the example shown in Table 2, we are now faced with a totally different scenario. As there was not an actual clocking already placed in the first clock IN position and the adjusted time was before 11:00, then this must be a first clocking. Had there been a clock IN already recorded, then the client may wish to have the second clocking of 10:34 rejected and an audit message of "duplicate clocking" recorded.

The Positioning Rule is a very powerful concept and can be tailored exactly to the requirements of the client.

Clock In				Clock Out			
Cont	Auth	Act	Adj	Cont	Auth	Act	Adj
09:00		10:34	10:45	12:00		12:02	12:00
13:00		13:00	13:00	17:00	18:00	17:54	17:45

Table 2 - Example Daily Clock Times.

(b) The Adjustment Rule

The Adjustment Rule is only used for adjusting the actual time, typically to the nearest quarter of an hour as specified by the client and taking into account grace periods etc. In Table 2 above, we have set the grace period for clock IN as being 3 minutes, and 5 minutes for a clock OUT. From the last actual clock OUT, at 17:54, it can be seen that this is greater than the five minute boundary set and therefore the employees adjusted time was 'quartered' to 17:45.

(c) The Payroll Rule

The Payroll Rule analyses the hours an employee has worked and apportions them into up to 99 different pay categories e.g. Time, Time + Half, etc., ready for transfer to the client's Payroll system. Once again, the Rule is written to fully satisfy the requirements of the client. For example, within Table 2 above, the employee was authorised to work an extra hour at the shift end. We can see from the actual clock OUT that the employee did not work the full hours overtime, therefore the Payroll rule has to decide whether to pay to the authorised time or the adjusted time. We can impose further restrictions by saying that an employee must work a full hours overtime before being entitled to be paid for it or that all overtime must be authorised before being paid, etc.

Other Rules are provided which cover aspects of overtime, holidays and sickness, flexitime, etc.

Each GaneTime Rule can be applied to individual employees if necessary, thus covering almost every possible circumstance that may arise.

The most important thing to remember about GaneTime Rules is that whatever situation may occur, now or in the future, simply adapting the Rules to meet with the changes in working practices will allow the system to "grow" with your requirements.

User Defined Rules

GaneTime uses information gathered at the time clocks by processing the data according to a number of predefined rules. The "User Defined Rules" option provides a method of creating and modifying such rules. Rules generated in this way perform simple processing algorithms which should cope with most common requirements.

Each rule contains two distinct types of information. The first being the criteria that selects the group of employees to which the rule should be applied. The remainder contains details of how to process the data from employees who fall into this selection criteria. Each rule of this type is described as a Criteria Set. There can be many Criteria Sets, and it is possible that an employee may match the selection criteria of more than one Criteria Set, but, since these are searched sequentially, the first match that is found will be applied. Special enquiry screens are available within the User Defined Rules Maintenance and Enquiry options that enable the user to determine which Criteria Sets match particular employees.

If, when applying the user defined rules, an employee is encountered which does not match any of the Criteria Sets, then the clocking is rejected and a message placed into the GaneTime Audit Trail.

The section of the rule that deals with the processing of the clocking has decision parameters which include the following:

- a) Is the clocking permitted?
- b) Should the clocking be treated as a Clock IN or a Clock OUT?
- c) Should any adjustment (quartering) be applied to the clocking?

```

READY ENTRY
Gane International
CLOCKING RULES DEFINITION RANGE SELECTION Rule Criteria Set : 1
Criteria Set Name : GaneTime Accept All Clockings
Overtime Scheme Range : 0 to 99
Flexitime Scheme Range : 0 to 99
Premium Scheme Range : 0 to 99
Analysis Code : Company Department Trade
Required Value :
Forbidden Value :
GaneTime Press F1 for Help GaneTime
The name by which you wish to refer to this particular criteria set
This is for information only.
RulDef Help=Beginner user: GaneTime(MAST) tty01(ansic) 16 Jun 16:02

```

User Defined rules - Range Selection Screen

The first field, Criteria Set Name is for user information only and should contain a meaningful name to help the user to identify the rule at a later date.

Selection of employees for processing is achieved by three scheme ranges and three analysis codes.

The Contractual Details of an employee within GaneTime include the specification of an overtime scheme number. An employee will only be accepted as matching the rule criteria if this scheme number falls within the Overtime Scheme Range specified on this screen. If the starting number of the range is 0 then the overtime range is not used as part of the selection criteria. Selection by Flexitime Scheme Range and Premium Scheme Range are handled in a similar manner.

Further specification of employee can be achieved by using the GaneTime analysis codes. Up to three of the analysis codes can be used, and these are defaulted to the first three during initial rule creation. The text code titles used for comparison can be changed by using CHOICE when in the appropriate field. All three title codes must be specified, but will be ignored during selection if the relevant Required Value and Forbidden Value fields are left blank.

If text is entered into the Required Value field, then the equivalent text code in the employee's contractual details must match this for the employee to be processed by this rule. Note that wildcards can be used. Text can be placed in a similar way in the Forbidden Value field. In this case a match will prevent the employee from being processed, even if the Required Value gave a match. For example, if the Required Value for Contract Code is "01*" and the Forbidden Value for Contract Code is "012", then employees with a Contract Code of "011" and "013" will be processed, but "012" will not.

```

READY ENTRY                               1 2 3 4 5
-----Gane International-----
CLOCKING RULES DEFINITION PARAMETER SELECTION      Rule Criteria Set : 1

Criteria Set Name      : GaneTime Accept All Clockings

Grace Period          IN: 15 minutes                OUT: 0 minutes
Quarter Grace         IN: No                       OUT: No
Quartering Period     : 0 minutes    Allow Unauth. Clocking: Yes

Clocking Allowed on Company Holiday : Always    Min. Clocking Gap : 0:01

Allow short absence booking : Yes    Ignore Blank Clocking Positions : No

Positioning Policy : Sequential    Force Rigid IN/OUT Clockings : Yes

Customised Rules : Positioning :      Adjustment :

-----GaneTime----- Press F1 for Help -----GaneTime-----
The number of minutes grace that will be allowed before the "quartering"
period is applied to a Clock In.

RulDef2 Help=Beginner user: GaneTime(MAST) tty01(ansic) 16 Jun 16:03

```

User Defined rules - Parameter Selection Screen A

Parameters for processing the clockings of selected employees are set up on two Parameter Selection screens. An important part of the processing is the "adjustment" of the clocking time. This is also known as "quartering".

The **Grace Period** fields determine how late or early an employee can clock in or out before a time adjustment is made to the clocking. The **Quartering Period** is the length of time (or multiple thereof) which will be added to the **Expected Clocking Time** in order to adjust the clocking time to an appropriate boundary. It is commonly set to a value of 15 minutes.

The **Allow Unauthorised Clockings** field is only applied to clockings which occur on "days" that have no **Expected Clocking Time** for that employee. If the field dictates that unauthorised clockings are not to be accepted, the clocking will be rejected. Otherwise, the **Adjusted Clocking Time** will be set from the **Actual Clocking Time**. Note that the definition of the "day" in this context is the calendar day on which the first expected clock IN occurs.

The **Clocking Allowed On Company Holiday** field is used when processing days set up in the Calendar File as Company Holidays. It has three possible values detailed as follows:

- 1) Always - The clocking will be processed in the same way as if the day was not a company holiday.
- 2) Never - All clockings on that day will be rejected, even if the **Allow Unauthorised Clockings** field is set to Yes.
- 3) Obey - Details defined within the Company Holiday Text Code will be used to decide acceptance policy.

The **Minimum Clocking Gap** field specifies the minimum time to be allowed between clockings. This is to prevent problems if an employee clocks twice because he or she was unsure that the badge had been read properly by the time clock. Only the first clocking in the "gap" is accepted.

The value in the **Allow Short Absence Booking** field dictates whether or not an absence should be automatically booked for short periods of time when the employee has clocked OUT early, but later clocks back IN again in advance of his expected clocking OUT time.

The value in the **Positioning Policy** field is used to determine which clocking position of the day the **Actual Clocking Time** represents. These user defined rules can only decide this in one of two ways. Consequently, a CHOICE of **Closest Match** or **Sequential** has been provided. If **Closest Match** is selected, the clocking position is taken as the one whose **Expected Clocking Time** is nearest to the **Actual Clocking Time**. If **Sequential** is selected, the position is taken as the next clocking position which has not yet been accepted for the day.

The basic rules which the user can set up in GaneTime will cope with most types of clocking processing. However, in complex cases, special positioning and adjustment rules can be created to suit the needs of the user. If these are used, the names of these rules can be entered in the **Customised Rules Positioning** and **Adjustment** fields. The customised rules will then be applied to employees who match the criteria for this user rule **Criteria Set**.



User Defined Rules - Parameter Selection Screen B

On the second of the parameter selection screens are fields which specify how late or early a clocking must be before it is rejected or audited. The Permitted Lateness fields refer to the time beyond the Expected Clocking Time after which a clocking (IN or OUT) will be rejected. Similarly the Permitted Earliness fields refer to the length of time prior to the Expected Clocking Time before which a clocking (IN or OUT) will be rejected.

The Unaudited Lateness and Unaudited Earliness fields operate in the same way except that rather than rejecting a clocking at these time points, a warning of lateness or earliness is added to the Audit Trail for offending clockings. These warnings in no way affect the rejections created by the Permitted fields described above. These acceptance and warning time limits can be individually specified for the First Clocking Position and the Final Clocking Position, with a third common set of time limits for All Other Clocking Positions.

A blank value in any of the above fields effectively disables the rejection or auditing.

Auditing Of Clockings

Clockings which are processed by a rule and are subsequently accepted are not recorded in the GaneTime Audit Trail. However, if a clocking is rejected by a rule, an audit code is generated and stored with a code name beginning with "cl:R". Similarly, the warnings generated by the Unaudited Earliness and Lateness fields give an audit code beginning with "cl:W".

For example: cl:Wlate & cl:Wearly
 cl:Rrepeat & cl:Rlate

Flexitime

GaneTime incorporates flexible working patterns (Flexitime) with multiple core times at which employees must be present, and multiple envelope (band) times, in which employees may start and finish around those core times. These multiple core and envelope times can be defined on an employee by employee basis. This comprehensive approach caters for a wider range of employees, both those who work within a rigid, more traditional shift pattern, and those with a flexible attendance pattern.

Flexitime workers within GaneTime can each have a maximum and minimum deficit and surplus defined, to be carried forward to the next "Period". GaneTime also allows the definition of this Flexitime "Period" to be specified for each employee. Typically clients would require only one Flexitime "Period" affecting all employees. On occasion, a number of periods for different groups of employees may need to be defined to run simultaneously.

Payroll Interface

As GaneTime maintains records of employees attendance, this information can be passed to the client payroll system, and enables a high degree of flexibility. GaneTime allows the definition of many different pay period types. The Pay Periods specified in Appendix A are valid for an employee within GaneTime and define the period of time between each End of Pay Period being run for the employee.

Each employee is identified within one of these pay periods and all information is checked by the system at the end of each day. GaneTime determines when it is time to produce a file for transfer to the payroll system. Payroll data is produced as required for those employees within each specified pay period type. It is therefore possible, using GaneTime, to record attendance for any mixture of pay period types, weekly or monthly paid staff.

The **Payroll Transfer File** is automatically created at the end of a pay period for each specific pay period type. This file can be processed when appropriate by the client's payroll system. Payroll processing need not be undertaken on the same processor as GaneTime, it may be carried out on a completely different computer in a different location. To facilitate this GaneTime has optional modules which enable the payroll file to be transmitted to another machine using any available communications links.

The structure of the payroll transfer file can be defined by the client to meet with the record layout required by their Payroll system. We have significant experience in "customising" transfer files to interface with other systems.

```

READY ENTRY
Gane International
CALENDAR FILE MAINTENANCE
2004

Attendance Year starts 1 / 4 / 2004

B.S.T. Starts          B.S.T. Ends

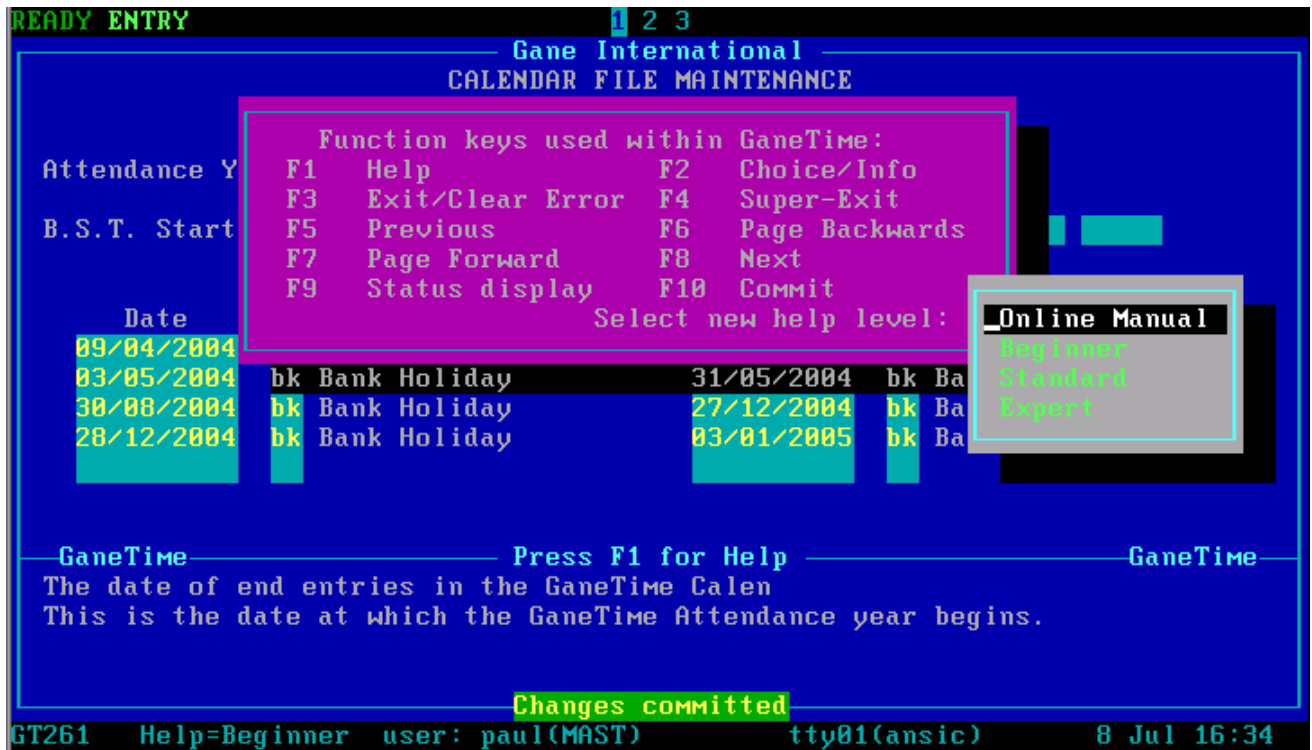
Statutory Holidays
Date      Absence code      Date      Absence code
09/04/2004 bk Bank Holiday    12/04/2004 bk Bank Holiday
03/05/2004 bk Bank Holiday    31/05/2004 bk Bank Holiday
30/08/2004 bk Bank Holiday    27/12/2004 bk Bank Holiday
28/12/2004 bk Bank Holiday    03/01/2005 bk Bank Holiday

GaneTime Press F1 for Help GaneTime
The date of the start of the Attendance year.
This is the date at which the GaneTime Attendance year begins.

Changes committed
GT261 Help=Beginner user: paul(MAST) tty01(ansic) 8 Jul 16:32
    
```

Calendar File

GaneTime has a calendar file on which the user records the dates of Statutory Holidays or factory shutdowns. The file is also used to store the calendar date at which each 'Attendance Year' begins. It can also contain pay period ending dates for those employees whose pay periods end on an irregular basis, and are therefore not covered by any of the pay period types supported by GaneTime. In addition, the calendar file allows the user to specify the dates and times for the start and end of Daylight Savings Time (DST), or British Summer Time (BST), and GaneTime can optionally update both the computer's internal system time and that of all time clocks as appropriate.



On-Line Help

GaneTime uses 'pop up' menus when selecting a process and each option on the menu will have an associated description held in a file which will be displayed in a **Help Window** at the bottom of the screen. This feature also applies to data entry screens so that the user has the on-line **User Help** describing the field that the cursor is currently on.

In keeping with the modular approach and to ensure a true international flavour, these help texts and all other screen and report texts within the system are held in the language dependant modules. This enables, for example, French or German versions of the system to be installed.

Each user of GaneTime has a user definable **Help Level** to identify whether they are beginners or experts on the system. One of three **Help Levels** may be selected by the user. The level selected determines the amount of help text, describing the current field, which will be displayed in the **Help Window** at the foot of the screen:

Beginner	-	4 lines of Help Text are displayed
Standard	-	2 lines of Help Text are displayed
Expert	-	No lines of Help Text are displayed

An initial level of **Beginner** is set when a user is first added to the system which can be changed by the user at any time.

```

READY
-----Gane International-----
Page 389      -      Calendar File      (3 of 10)

You must first specify a Calendar Year (eg : "1999").  This is NOT the
actual year, it is YOUR ATTENDANCE YEAR.  GaneTime is supplied with Calendar
Records set up for the current actual year and the following year.  Your
Authorised GaneTime Dealer will customise these records during installation
of your licenced copy.  There are three "pages" of information provided for
the selected Attendance Calendar Year.

-----
Quit Manual  Index page  Previous page  Next page  Goto page
GaneTime    Press F1 for Help  -----GaneTime
The date of end entries in the GaneTime Calen
This is the date at which the GaneTime Attendance year begins.

Changes committed
GT261  Help=Beginner  user: paul(MAST)  tty01(ansic)  8 Jul 16:40

```

On-Line User Manual

There is also an **Online Manual** available to users of the system at all times. If selected, **GaneTime** will initially position the user at the page within the manual most relevant to the current field. The user may then select pages within the manual as required, or refer to an index for a comprehensive list of the subjects covered.

```

READY CHOICE
----- Gane International -----
PLEASE ENTER SELECTION CRITERIA FOR EMPLOYEE CONTRACTUAL DETAIL REPORT

Start _____
Surna _____
Company _____
Section _____
Foreman _____
N. I. Num _____
Trade _____

Badgholder Group: _____ Current Zone: _____

----- GaneTime ----- Press F1 for Help ----- GaneTime
Select a printer by entering a printer number.
Press "CHOICE" for a list of printers defined to the operating system.
If there are "No choices available", then reports are not available ...
.. until printers are defined in the appropriate "print.list" file.
13 employees selected
PRINT Help=Beginner user: paul(MAST) tty01(ansic) 8 Jul 16:42

```

Background Reporting

GaneTime utilises the full capabilities of UNIX by running all reports in a "background" mode, thereby freeing up the terminal for other functions or processes whilst the report is being run.

When the report selection parameters have been committed, a pop-up window appears, like the one in the example above. The user may direct the output of the report, utilising a CHOICE window, to any number of printers defined by the system, or the report may be redirected to a file. In addition, when selecting a printer, the number of copies may be specified.

```
----- Gane International -----
Please Specify Time Parameters:
Minute      : 00
Hour        : 09
Day of Month : *
Day of Week  : 1
Month       : *
Filename    : contract.rep_

----- GaneTime ----- Press F1 for Help ----- GaneTime -----
The filename used for storing the report
This filename will be executed via the System Cron facility
Timed Reports does not support subdirectories

13 employees selected
GTTRPT Help=Beginner user: paul(MAST) tty01(ansic) 8 Jul 16:47
```

Timed Reports

All reports within GaneTime can be submitted automatically on a timed basis. This even applies to reports which are submitted for a range of dates. For example, if an **Employee Absence** report was submitted for the first time to show payroll information between 1st May 2002 and 7th May 2002, and the Timed Report parameters were set to repeat the report every seven days, then these dates would be "relative" and on the next occasion that the report ran the date range would be 8th May 2002 to 14th May 2002. Reports can be set to run at various frequencies, from the same time each day, to the same time on the same day each year. GaneTime utilises all of the capabilities of the UNIX crontab function.

```
READY INFO                                     1 2 3
-----Gane International-----
EMPLOYEE ABSENCE SUMMARY REPORT                Gane International        Report
-----
!
!      Submitted by paul On tty01
!
! First date: 08/07/2004                        Last date: 08/07/2
!
-----
              Date                contracted      partial
              08/07/2004 Thursday      attendance      absence
                                   13                11
*****      END OF REPORT      *****

contrac Help=Beginner  user: paul(MAST)      tty01(ansic)      8 Jul 16:50
```

On-Screen Viewing of Reports

Reports may be submitted as normal but routed to a file on the disk instead of a printer. These files can then be viewed on-screen later. This is particularly useful when the user needs to run a number of draft reports before being satisfied that the data on the GaneTime system has been updated to the required level. An example of this would be immediately prior to a Payroll Transfer. It also provides the user with the facility to store a report in a file, either for subsequent transfer to an external system, or simply for later reference.

Standard Package Options

GaneTime is distributed with all of the package options listed below included within the software, however, each client is licensed only for those options purchased. A comprehensive licensing procedure allows the client to add additional package options at any time without the need for reinstallation of the software.

Listed below are the available package options with a brief description of each.

Advanced Clock Support :

- **Off-line Clocks.** Time clocks which run off-line from the central processor and have their clock transactions manually extracted onto a PC, typically a laptop or notebook. These clock transactions are subsequently transferred to GaneTime using either a communications link and/or the Gane ASCII File Import facility.
- **Auto-Dial Clocks.** Time clocks which are run off-line but which have their clock transactions automatically collected at user defined intervals using a dial-up modem.
- **Dedicated Clock Enquiry.** This facility allows a nominated time clock to be logically linked to a display terminal. When an employee wipes their card at this clock, the daily hours for that employee will be displayed on the associated terminal for up to 5 seconds, or until another employee wipes their card.

Advanced Analysis :

- **Timed Changes to Analysis Codes.** This facility allows the entry of specific timed entries of changes to one or more of an employees nine user defined analysis codes. In this way the system can record a change of analysis within the employees attendance, for example a change of department, or cost centre or a change of role or job. Further enquiries and reports provide analysis of the time spent at any combination of these analysis codes, for example the total time spent within each department, or at each role.
- **Sundry Payroll Payments.** Support is provided to allow an authorised operator to enter a number of user defined Sundry Payroll Payment fields at a VDU terminal. These are then treated as monetary values which are passed to the payroll as part of the Payroll Transfer procedure.
- **Departmental Security.** Multiple logical "departments" or even site "locations" can be defined. It is then possible for operators to be authorised to have restricted access only to those employees within their own "Department". This feature also supports a hierarchical ability for authorised operators to have access to employees within more than one "Department".

Standard Package Options - (continued)

Manpower Planning and Rostering :

- **Cost Centre Budget Analysis.** Allows the user to specifically define a number of user defined Cost Centre codes, and Budget Periods. The user can then specify a budgeted manpower requirement at each Cost Centre and GaneTime will provide actual figures for comparison.
- **Manning Levels.** The user can also define a minimum manning level for a specific category of employee within each shift type (early, late, nights etc) over a period. The system will then check these minimum values when a holiday or other absence is booked, and a warning will be provided if the minimum level would not be met.

Labour Costing :

The Labour Costing / Labour Allocation module allows the user to split an employees hours into various different Job/Cost Codes.

- **Cost Code Definition.** The Cost Code definition is achieved using Site File Maintenance. This sets up the format of the Cost Code which may be entered on the Labour Costing Screen. The Cost Code may be made up of up to 9 parts, the length of each part being User Configurable in the Site File. The Cost Code, to which a person is assigned by default, is the last one which is known about. If no previous Cost Code has been used, the Code is determined from that employees contractual data.
- **Labour Allocation.** The actual allocation of time to different Cost Codes.

Full Crash Recovery :

- **Transaction Logging.** This sophisticated option provides full database integrity checking, complete with backup checkpoint, and a detailed transaction log of each change to the GaneTime database subsequent to the backup. In this way, should the system fail, it is possible to recreate the database by restoring from the latest backup tape, and re-processing the transactions to bring the database up to the moment of the system crash, minimising any losses, and allowing the system to be made operational again within a short period of time. This transaction log is also designed to be on a separate disk drive or even on a separate processor.

Standard Package Options - (continued)

Support for Stand-by Processor :

- **Hot Stand-by.** To minimise down time in the event of a system failure, a further option is provided which will allow a second processor to receive database transactions from the main host and process these against a stand-by database. In the event of a system crash, it will then be possible for the customer to switch to this stand-by machine without reprocessing the backup and transactions. This option will require a second copy of the **GaneTime** license which is provided within the cost of the option, but is specifically restricted to use as a stand-by when the main processor is temporarily unavailable due to a system failure.

ASCII File Import Facility :

- **Imported Clockings.** This facility allows clocking transactions to be received via an ASCII file rather than through the conventional means of receiving clockings directly from a Time and Attendance clocking device. It is ideal for receiving data from an Access Control system where some of the Access Control readers are designated as Time and Attendance readers.

Special processing controls are utilised to ensure that the ASCII data is not lost in the event of a system malfunction. Any errors which occur during processing are recorded in an error log. There is an amount of flexibility built into the record format of the ASCII file allowing data to be exported from most systems without the need for special routines, utilising products such as Informix SQL, to provide the required format.

Customised Package Options

Paid Hours Analysis :

- **Paid Hours.** By using the GaneTime Rules, the system can be made to apportion attended time (and absences) within up to 99 different Payroll Rates (eg: Basic, Time and a Third, Double Time) and also 99 different Premium Rates (eg: Shift Premium, Saturday Morning).

The price of this Package Option is based on the amount of effort required to specify and program the Payroll Rules to meet with the customer's working practices. A provisional estimate is used, based on the anticipated size of the proposed system. This provision is usually sufficient for most customers, however, should the requirements or programming be more complex, additional specification and programming would be charged at Gane's prevailing daily charging rate.

Gane's normal practice, as part of our quality procedures, is to quote for the preparation of a Functional Specification at the start of a project. This will allow the clear definition of the customer's exact requirements, prior to quoting for a solution tailored to meet with these requirements. The Functional Specification is often also seen as a Feasibility Study, and may be undertaken as a preliminary contract. Gane offer a discount within the main contract of between 30% and 50% of the cost of preparing the Functional Specification, as the Specification stage of your requirements will already have been completed to Gane standards.

The price of this Customised Package Option should therefore be seen as "Budgetary", and should be revised upon completion of the Functional Specification.

Payroll Interface :

- **Payroll Transfer.** A pre-requisite to this option is the **Paid Hours Analysis** option above. Once the employees paid hours have been categorised, a customised interface is designed to transfer the information to the customers payroll.

The price of this Package Option is based on the amount of effort required to specify and program a Payroll Transfer to meet with the customer's requirements. A provisional estimate is used, based on the anticipated size of the proposed system. This provision is usually sufficient for most customers, however, should the requirements or programming be more complex, additional specification and programming would be charged at Gane's prevailing daily charging rate.

The price of this Customised Package Option should therefore also be seen as "Budgetary", and should be revised upon completion of the Functional Specification.

System Package Options

GaneEntry - Access Control :

- **Site Access Control.** This option is in fact a discrete sub-system, capable of running with or without Time & Attendance, and requires the use of certain specific models of time clocks to provide access control to the site.

The basic function of this Package Option is to provide controlled access into, or out of, specified areas of the customer's site(s). To achieve this, it is necessary to have some sort of badge reader or time clock at each access point (door, turnstile, barrier etc.). **GaneEntry** supports most popular badge technologies including, but not limited to, bar code, proximity, magnetic stripe, and Wiegand. Biometric readers are also supported. These readers are then used to identify the individual (badge holder), allowing the system to determine, using an **Access Strategy**, whether or not to grant access to the badge holder at this point.

An **Access Strategy** provides an easy way to determine "WHO should be allowed access to WHERE and WHEN".

WHO	is determined using a Badge holder Group . Each individual known to the system can be identified as belonging one of 255 different Badge holder Groups (eg: Security, Sales, Admin, Part-time, Visitor). This permits access to be defined quickly for groups of individuals.
WHERE	is determined using a Reader Group . Each access point on the system will require at least one reader. These readers are then assigned one of 255 different Reader Groups (eg: SalesBldg, SiteEntry, Canteen, Computer), allowing access to be defined for specified areas within the site(s) to be controlled.
WHEN	is determined using a Time Zone . Up to 63 Time Zones can be defined, each of which allows the specification of up to three separate time periods for each day of the week.

A simple **Access Strategy** would therefore be to permit access for sales staff to and from the main sales building during office hours. This could be achieved by creating an **Access Strategy** of:

Badge holder Group	Sales
Reader Group	SalesBldg
Time Zone	OfficeHrs

If the same staff were to be allowed access to the main site at all other times during the working week, a second **Access Strategy** could also be created:

Badge holder Group	Sales
Reader Group	SiteEntry
Time Zone	Weekdays

GaneTime Hardware

Gane software supports electronic time clocks from most major manufacturers although where Access Control or Shop Floor Data Collection is a requirement, we would recommend consideration be given to our own range of Readers and Controllers. These units provide local intelligence over a distributed network and are able to collect data and make local validation decisions without referring to the host computer.

Gane hardware can communicate with the host computer in many different ways including direct connect, land line modem, wireless communications, local and wide area networks (see Appendix B for a schematic of possible topologies). No two installations are the same so a site survey is usually carried out to establish the best method(s) of communication. Once this has been agreed, we will work with you to ensure that the infrastructure is implemented in an efficient and cost effective manner.

In addition to providing access control functionality, Gane Intelligent Controllers also support 10 inputs (for example, exit buttons or door open sensors) and 10 outputs (site sirens, door locks, turnstile pulses etc).

Panther Intelligent Controller - PIC4

The Gane controller comprises of an IP66 enclosure measuring 380mm high x 380mm wide x 210mm deep, housing the major components of the system:

- Power transformer with switch and IEC inlet.
- Single Board Computer (SBC) with non-volatile data storage.
- Input/Output PCB (printed circuit board) which renders:
 - A multi-voltage Power Supply with battery backup.
 - An interface with the SBC
 - Card reader interfaces
 - Access Control outputs and inputs.

The on-board Reader Interfaces allows the connection of up to 4 readers. Each individual interface can be supplied in one of two types which must be specified at the time of ordering. These are:

- Gane Standard (PBR's or PBT's etc). Each reader can be sited up to a maximum of 1.2 kilometres from the controller.
- Varieties of Weigand or Clock and Data Standard. Each reader can be sited up to a maximum of 100 metres from the controller.

These can have 5v, 12v or 35v (24v during battery backup) supplies (Jumper configurable)

Each reader channel maintains:

- Power supply to Reader
- Reader data connections
- 2 opto-isolated inputs activated by external contact
- Lock Control (12v DC)
- Auxiliary relay output

The Single Board Computer provides:

- Real Time clock with on board battery backup
- Watchdog timer
- Static RAM - storing the last 7,000 transactions.

In addition the I/O PCB provides:

- 'Mains Failure' and 'Battery Low' inputs
- Fire Panel interface for monitoring and automatic release of doors in the event of Fire panel Activation

The interface to the host computer is a 4 wire multi-drop RS422/485 with selectable baud rate between 1200 and 9600. For single drop use an RS232 interface is available for host connection. Alternatively, this can be used to attach a local serial printer if the controller may have to operate in Stand Alone mode without connection to a host computer.

Card Readers

PBR

The PBR (Panther Barcode Reader) card reader is a fully microprocessor controlled, infra-red barcode reader unit. Machined from a solid block of Acetyl (*Nylon 66*) and sealable to provide IP66 protection of the electronics, the Gane PBR has extra security and immunity against weather conditions.

The PBR reader is equipped with the following features:

- Audio indicator
(two tones provide audible confirmation of valid and invalid "reads")
- Visual indicator
(Red/Amber/Green LED's provide visual confirmation of "read" status)

PBT

The PBT (Panther Barcode Terminal) reader consists of a microprocessor and a decoder which utilises infra-red barcode reader technology. A similar proximity card version is also available. The PBT is also machined from a solid block of Acetyl (*Nylon 66*) and is surface mounted.

The PBT reader is equipped with the following features:

- 16 key keypad (optional)
- Visual indicators
(2 x 20 character Liquid Crystal Display panel)
(Red/Amber/Green LED's provide visual confirmation of "read" status)
- Audio indicator
(two tones provide audible confirmation of valid and invalid "reads")

Time Clocks

PIBT - Panther Intelligent Barcode Terminal

Although the PIBT Time Clock may look externally the same as the PBT, it is functionally the equivalent of a single reader version of the Panther Intelligent Controller and an PBT. The PIBT can be connected to the host computer in exactly the same manner as a controller and, as with the controller, the PIBT is able to operate remotely using a dial-up or dedicated modem. The PIBT requires a separate 12v power supply.

For PIBT equipment specification, please see PBT.

Cellular PIBT

This is an optional model of the PIBT Time Clock which is specifically designed to be sited remotely, either in a location where it is difficult or not cost effective to provide data cabling (for example: a shipyard or a construction site), or in a temporary location which may be subject to relocation. This option uses Vodaphone PAKNET cellular radio modems at the host computer and at the location of each cellular PIBT. The host computer will automatically "dial-up" and collect data from these cellular PIBT's on user-defined timed basis.

For cellular PIBT equipment specification, please see PIBT. The PAKNET cellular radio modem is mounted inside a separate power supply and battery backup cabinet, and uses a standard PAKNET antenna, mounted externally. The cabinet can be installed a maximum of 30m from the PIBT.

Badge Technology

Gane data capture equipment uses obscured barcode badges as standard. If required, other badge technologies can be accommodated - including Wiegand, Magnetic Stripe, and Proximity.

Appendix A

Valid Flexitime Periods / Pay Periods

<u>Value</u>	<u>Meaning</u>
nnn	Every "nnn" days.
Wn	Weekly with a cut off at the end of day "n" of the week. e.g. W7 = weekly at the end of Saturday (assuming Day 1 of week has been defined by user as Sunday)
xWn	Every "x" weeks with a cut off at the end of day "n" of that week. e.g. 4W6 = every fourth Friday (assuming Day 1 of week has been defined by user as Sunday)
Mnn	Monthly with a cut off at the end of day "nn" of the month. e.g. M20 = 20th of the month.
MWn	Monthly with a cut off at the end of the last weekday "n" of the month. e.g. MW6 = last Friday of the month (assuming Day 1 of week has been defined by user as Sunday)
C	Using the Pay Periods dates specified in the calendar file.

Appendix B

Hardware Schematic