

2. Improved Feature of version 3.25

Feature	Description	Requested From	Special comment
SMDA Backup Record Expansion Manual	<u>Before</u> No of SMDA Backup Record: 10001 <u>After</u> No of SMDA Backup Record: 20000	KOREA	
VPM Mail Box Contents Clear by OMS or DTEL	<u>Before</u> VPM mail can not be deleted by OMS <u>After</u> VPM mail can be deleted by OMS	RUSSIA	
Multi Step Call Forward Manual	<u>Before</u> Do not support multi-step call forward internally. <u>After</u> Support multi-step call forward internally.	KOREA	
PSTN Real ANI Total Digit No Expand	<u>Before</u> PSTN Real ANI : max. 8 digits <u>After</u> PSTN Real ANI : max. 10 digits	RUSSIA	
ACD Wait Queue Display	<u>Before</u> Do not support to display ACD Wait calls in LKD D-Tel. <u>After</u> Support to display ACD Wait calls in LKD D-Tel.	INDIA	DSLCLKD: v2.53 or later

Version 3.25
Date 2003-10-23

<i>Feature</i>	<i>Description</i>	<i>Requested From</i>	<i>Special comment</i>
ATD Admin Deny	<u>Before</u> Do not support to restrict ATD admin. <u>After</u> Support to restrict ATD admin. (Temporary option: 41)	<i>INDIA</i>	
ATD Alarm Report	<u>Before</u> Report ATD alarm periodically. <u>After</u> Stop alarm report, when RLS or CLR key is pressed.	<i>INDIA</i>	

SMDA (Station Message Detail Accounting)

General Description

This function allows sending charge information to external billing device according to defined format and protocol to calculate charge of outgoing/incoming/extension call. An external billing device can be connected via SIO or LAN. Charging duplication is possible according to system option. An external billing device is connected to CS1000 as follows:

- SIO single connection
- LAN single connection
- SIO + LAN double connection
- SIO + SIO double connection
- LAN multiple connection (Port Number discrimination)

Operation Sequence

Extension Call Charge

- 1 The extension A makes a call to the extension B.
- 2 The extension B answers. (Charge information starting point)
- 3 Conversation with each other.
- 4 One of them hangs up. (Output charge information message making point)

Trunk Outgoing Call Charge

- 1 An extension or a leased line subscriber makes a call to an external subscriber.
- 2 An external subscriber answers. (Charge information starting point)
(If outgoing trunk type is C/O without answer signal, call charging starts after pre-assigned time.)
- 3 Conversation with each other.
- 4 One of them hangs up. (Output charge information message making point)

Trunk Incoming Call Charge

- 1 An external subscriber makes a call to an extension or a leased line subscriber.
- 2 An extension or a leased line subscriber answers. (Charge information starting point)
- 3 Conversation with each other.
- 4 One of them hangs up. (Output charge information message making point)

Service Conditions

An external billing device should follow the protocol data that CS1000 offers.

Information included charging message follows protocol data that CS1000 offers.

- ✎✎ In case that external billing device is not connected with CS1000, CS1000 can store charging information up to the maximum 20,000 and discards additionally generating charging information.
- ✎✎ CS1000 should be restarted after loading Config.sys including connection method and interface with an external billing device and whether to duplicate billing or not. (Default, CS1000 sends charge information message via SIO CN4 only if there is no definition.)
- ✎✎ The interface of charging information can be separated from the interface of PMS information in case of singular charging.
- ✎✎ In case of charging duplication, connected external billing devices receive same charge information.
- ✎✎ In below Cases, charging messages are not expected.
 - 1 Outgoing call is sent to no metering trunk call.
 - 2 Outgoing call is no metering extension call.
 - 3 A call to no charge external subscriber (emergency call)
 - 4 An extension subscriber makes a call through no charge-leased line (An extension's characteristic, All Call Charge must not be assigned.)
 - 5 An extension subscriber makes a no charge local call. (An extension's characteristic, All Call Charge must not be assigned.)

Data Generation

- ✎✎ Make Config.sys file
[config => 1.10 Config File Maker]
- ✎✎ Assign charging output device
[11.1 Charge option Charge Result Output Device]
- ✎✎ Assign whether to charge or not
Outgoing Call : If assigned charging output device, execute default.
Incoming Call : [11.1 Charge Option => I/C Call Charge]
Internal Call : [11.1 Charge Option => Internal Call Charge]
- ✎✎ Assign Leased Line charging
[11.1 Charge Option => Tie Call Charge]
- ✎✎ Assign charge Local Call
[11.1 Charge Option => Local Call Charge]
- ✎✎ Assign no metering trunk
[4.1 Trunk Information => Trunk Option => 7. No Metering]
- ✎✎ Assign no charge extension
[3.1 Extension information => Extension Characteristic => 9. No charge]
- ✎✎ Assign all call charge extension

[3.1 Extension information – Extension Characteristic 10.All Call Charge]

✎✎ Assign no charge external subscriber number

[11.2 No charge code]

✎✎ Assign the extension whose charging information is displayed on the LCD of the attendant.

[3.1 Extension information – Extension Characteristic 38.Charge send to ATD]

✎✎ Indicate ASICII value of Charge information message.

[11.1 Charge Option => Billing Message (Hex/Decimal)]

✎✎ Assign whether to check BCC of charge information message or not

[11.1 Charge Option => PMS/Billing Message BCC Check]

✎✎ Assign charging start time of trunk without answer signal

[11.1 Charge Option => Charge start time]

✎✎ Assign whether to put LCR Digits in mandatory field of charging information message or not

[11.1 Charge Option => LCR Digits in Mandatory Field]

Interactions

✎✎ 16M Byte size DiskOnChip of CPM is required for charging duplication.

✎✎ Refer to CS1000 SMDA Protocol document.

✎✎ Charging File in singular mode : PMSTX.DQ (Including PMS Message and Billing Message or Billing Message)

Charging Files in Duplication mode : PMSTX.DQ and SMDA2.DQ

✎✎ SIO and LAN Connection method for External device Interface.

1 External device Interface Types.

VMS MSI (SIO or LAN) – VMS on [Config File Maker] of OMS

PMS and Billing (SIO or LAN) – PMS/Billing on [Config File Maker] of OMS

Billing Only (SIO or LAN) – Billing on [Config File Maker] of OMS

Billing Duplication (SIO or LAN) – Billing(second) on [Config File Maker] of OMS

Alarm Box (SIO Only) – Alarm Box on [Config File Maker] of OMS

TAPI Server (SIO or LAN) – Use TAPI on [Config File Maker] of OMS

ANI TX (SIO Only) – ANITX on [Config File Maker] of OMS

Police Function Interface only for RUSSIA (SIO or LAN) – POLICE FUNCTION on [Config File Maker] of OMS

2 PMS and Billing and Billing Only can not be used at the same time, in case of using Billing Only, only PMS Message is offered to the interface of PMS and Billing.

- 3 Charging Duplication can be used in the form of PMS and Billing / Billing(Second) or Billing Only / Billing(Second).
- 4 In case of LAN interface, the port for PMS and Billing is 6012, the port for Billing Only is 6013 and the port for Billing(Second) is 6014.
- 5 System SIO can be used up to maximum 2 at the same time in order to support above functions.
- 6 Connection method of each service can be assigned at [Config.sys File Maker] of OMS.
- 7 If there is no Config.sys file, default interface is as follow:
SIO2 : VMS MSI
CN4 : PMS and Billing

Call Forward – Busy

General Description

When an extension that registered with this function is busy, this function lets the incoming calls to be forwarded to other extension/outside subscriber that is assigned in advance.

Operation Sequence

☞☞ Call forward – busy from SLT (single line telephone) to extension

- 1 An extension hooks off the handset.
- 2 The extension dials the call forward – busy call forwarding code (Default: *522).
- 3 The extension enters an extension number where the call will be forwarded.
- 4 If the number is valid and the registration is successfully completed, the extension will hear the confirmation tone.

☞☞ Call forward – busy from SLT to outside subscriber

- 1 An extension hooks off the handset.
- 2 The extension dials the call forward – busy call forwarding code (Default: *522).
- 3 The extension dials the access code.
- 4 The extension enters an external number.
- 5 The subscriber hooks on the handset after entering the number.

☞☞ Call forward – busy using buttons from DKTU to extension

- 1 An extension hooks off the handset or presses "MON" button.
- 1 The extension presses "DND/FWD" button. In this case, the following message is displayed on the LCD.

**ENTER CALL FORWARD
TYPE**

- 3 The extension enters "2". In this case, the following message is displayed on the LCD.

ENTER A DIAL DIGIT

- 4 The extension dials an extension number.
- 5 If the extension number is valid and the registration is successfully completed, the extension hears the service set tone, the "DND/FWD" LED turns on and flashes, and the following message is displayed on the LCD.

**FORWARD – BUSY
XXXX 09:00 am**

☞☞ Call forward – busy using buttons from DKTU o outside subscriber

- 1 An extension hooks off the handset or presses "MON" button.
- 2 The extension presses "DND/FWD" button. In this case, the following message is displayed on the LCD.

ENTER CALL FORWARD TYPE

- 3 The extension enters "2". In this case, the following message is displayed on the LCD.

ENTER A DIAL DIGIT

- 4 The extension dials the trunk access code.

Note: if the trunk access code is not correct, a warning tone will be sent. In this case, the extension should resume the DKTU and then restart the registration from the beginning.

- 5 The extension dials an outside subscriber's number.
- 6 After entering the outside subscriber's number to be forwarded and pressing "HOLD/SAVE" button, the extension hears the service set tone, and the "DND/FWD" LED turns on and flashes.
- 7 If the extension hooks on the handset or presses "MON" button, the following registration information is displayed on the LCD.

FORWARD – BUSY

XXXXXXXXXX 09:00 am

Service Conditions

- ☞☞ The OMS can determine whether or not to use the call forward function.
- ☞☞ An extension cannot register with more than two call-forward functions at the same time.
- ☞☞ If an extension requests for another call forward registration while it is already registered to a call forward, the previous call forward will be automatically changed.
- ☞☞ If an extension that is registered to a call forward hooks off the handset, it will first hear the confirmation tone and then hear the dial tone.
- ☞☞ In case of registering with the call forward from DKTU to outside subscribe, up to 12 digits can be displayed.
- ☞☞ An extension cannot perform the call forward to the extension representative attendant.
- ☞☞ An extension cannot perform the call forward to the hot line subscribers.
- ☞☞ It is not possible to assign CFWD to itself.
- ☞☞ The extensions in "Class E" or lower cannot register with the call forward – unconditional to an external number.

✎✎ If the DND function is registered, it needs to cancel this function and then register with the call forward function. It can be assigned whether or not call forward function is allowed.

✎✎ It supports multi-step call forward internally. The call forward counter can be adjusted from 1 to 5 in the OMS.

Data Generation

✎✎ Registration Code

[2.1 System Numbering Plan – Feature Code Plan CFWD REG.(Busy)]

✎✎ Assign whether or not to use the call forward.

[3.1 Extension information – Feature Restriction Call Forwarding]

✎✎ Assign the call forward alert tone.

[2.4 System tone parameter – Call Forward Alert Tone]

✎✎ Assign the call forward step counter

[2.6 System Feature Option – [system] Call Forward Step Counter]

Interactions

✎✎ It is possible to register the call forward using button or registration code while the absence message is registered but the call forward using codes can be used. In this case, the absence message will be deleted.

✎✎ The operator can cancel the registered call forward compulsorily if necessary.

✎✎ If the absence message is registered to a DKTU in which the call forward is registered, the call forward is canceled.

✎✎ If the DND is registered, the extension should cancel the function before registering the call forward.

✎✎ When registering with the call forward to an outside subscriber, the OMS checks the extension class to allow/deny.

Call Forward – Busy/No Answer

General Description

When an extension that is registered with this function is busy or does not answer, this function lets the incoming calls to be forwarded to other pre-determined extension/outside subscriber.

Operation Sequence

☞☞ Call Forward – Busy/No Answer from SLT to extension

- 1 An extension hooks off the handset.
- 2 The extension dials the call forward – busy/no answer code (Default: *524).
- 3 The extension enters an extension number where the call will be forwarded.
- 4 If the number is valid and the registration is successfully completed, the extension will hear the confirmation tone.

☞☞ Call Forward – Busy/No Answer from SLT to outside subscriber

- 1 An extension hooks off the handset.
- 2 The extension dials the call forward – busy/no answer code (Default: *524).
- 3 The extension dials the access code.
- 4 The extension enters an external number.
- 5 The subscriber hooks on the handset after entering the number.

☞☞ Call forward – Busy/No Answer using buttons from DKTU to extension

- 1 An extension presses “MON” button.
- 2 The extension presses “DND/FWD” button. In this case, the following message is displayed on the LCD.

ENTER CALL FORWARD TYPE

- 3 The extension enters “4”. In this case, the following message is displayed on the LCD.

ENTER A DIAL DIGIT

- 4 The extension dials an extension number.
- 5 If the extension number is valid and the registration is successfully completed, the extension hears the service set tone, the “DND/FWD” LED turns on and flashes, and the following message is displayed on the LCD.

FORWARD – BUSY/NO ANS

XXXX

09:00 am

☞☞ Call forward – Busy/No Answer using buttons from DKTU to outside subscriber

- 1 An extension hooks off the handset or presses “MON” button.
- 2 The extension presses “DND/FWD” button. In this case, the following

message is displayed on the LCD.

ENTER CALL FORWARD TYPE

- 3 The extension enters "4". In this case, the following message is displayed on the LCD.

ENTER A DIAL DIGIT

- 4 The extension dials the trunk access code.

Note: if the trunk access code is not correct, a warning tone will be sent. In this case, the extension should resume the DKTU and then restart the registration from the beginning.

- 5 The extension dials an outside subscriber's number.

- 6 After entering the outside subscriber's number to be forwarded and pressing "HOLD/SAVE" button, the extension hears the service set tone, and the "DND/FWD" LED turns on and flashes.

- 7 If the extension hooks on the handset or presses "MON" button, the following registration information is displayed on the LCD.

FORWARD - BUSY/NO ANS

XXXXXXXXX 09:00 am

Service Conditions

- ✎✎ The OMS can determine whether or not to use the call forward function.
- ✎✎ An extension cannot register with more than two call-forward functions at the same time.
- ✎✎ If an extension requests for another call forward registration while it is already registered to a call forward, the previous call forward will be automatically changed.
- ✎✎ If an extension that is registered to a call forward hooks off the handset, it will first hear the confirmation tone and then hear the dial tone.
- ✎✎ In case of registering with the call forward from DKTU to outside subscribe, up to 12 digits can be displayed.
- ✎✎ An extension cannot perform the call forward to the extension representative attendant.
- ✎✎ An extension cannot perform the call forward to the hot line subscribers.
- ✎✎ It is not possible to assign CFWD to itself.
- ✎✎ The extensions in "Class E" or lower cannot register with the call forward - unconditional to an external number.
- ✎✎ If the DND function is registered, it needs to cancel this function and then register with the call forward function. It can be assigned whether or not call forward function is allowed.

- ✎✎ It supports multi-step call forward internally. The call forward counter can be adjusted from 1 to 5 in the OMS.

Data Generation

- ✎✎ Registration Code

[2.1 System Numbering Plan – Feature Code Plan CFWD REG.(Busy/No Answer)]

- ✎✎ Assign whether or not to use the call forward.

[3.1 Extension information – Feature Restriction Call Forwarding]

- ✎✎ Assign the call forward alert tone.

[2.4 System tone parameter – Call Forward Alert Tone]

- ✎✎ Assign the call forward step counter

[2.6 System Feature Option – [system] Call Forward Step Counter]

Interactions

- ✎✎ It is possible to register the call forward using buttons or registration code while the absence message is registered but the call forward using codes can be used. In this case, the absence message will be deleted.
- ✎✎ The operator can cancel the registered call forward compulsorily if necessary.
- ✎✎ If the absence message is registered to a DKTU in which the call forward is registered, the call forward is canceled.
- ✎✎ If the DND is registered, the extension should cancel the function before registering the call forward.
- ✎✎ When registering with the call forward to an outside subscriber, the OMS checks the extension class to allow/deny.

Call Forward – Unconditional

General Description

If an extension registers with the call forward - unconditional, all calls incoming to the extension are unconditionally forwarded to other extensions or outside subscribers assigned, regardless of the extension status (busy, idle or DND).

Operation Sequence

☞☞ Call forward – unconditional from SLT (single line telephone) to extension

- 1 An extension hooks off the handset.
- 2 The extension dials the call forward – unconditional code (Default: *521).
- 3 The extension enters an extension number where the call will be forwarded.
- 4 If the number is valid and the registration is successfully completed, the extension will hear the confirmation tone.

☞☞ Call forward – unconditional from SLT to outside subscriber

- 1 An extension hooks off the handset.
- 2 The extension dials the call forward – unconditional code (Default: *521).
- 3 The extension dials the access code.
- 4 The extension enters an external number.
- 5 The subscriber hooks on the handset after entering the number.

☞☞ Call forward – unconditional using buttons from DKTU to extension

- 1 An extension hooks off the handset or presses “MON” button.
- 2 The extension presses “DND/FWD” button. In this case, the following message is displayed on the LCD.

ENTER CALL FORWARD TYPE

- 3 The extension enters “1”. In this case, the following message is displayed on the LCD.

ENTER A DIAL DIGIT

- 4 The extension dials an extension number.
- 5 If the extension number is valid and the registration is successfully completed, the extension hears the service set tone, the “DND/FWD” LED turns on and flashes, and the following message is displayed on the LCD.

FORWARD – ALL

XXXX

09:00 am

☞☞ Call forward – unconditional using buttons from DKTU to outside subscriber

- 1 An extension hooks off the handset or presses “MON” button.
- 2 The extension presses “DND/FWD” button. In this case, the following

message is displayed on the LCD.

ENTER CALL FORWARD TYPE

- 3 The extension enters "1". In this case, the following message is displayed on the LCD.

ENTER A DIAL DIGIT

- 4 The extension dials the trunk access code.

Note: if the trunk access code is not correct, the warning tone will be sent out. In this case, the extension should resume the DKTU and then restart the registration from the beginning.

- 5 The extension dials an outside subscriber's number.

- 6 After entering the outside subscriber's number to be forwarded and pressing "HOLD/SAVE" button, the extension hears the service set tone, and the "DND/FWD" LED turns on and flashes.

- 7 If the extension hooks on the handset or presses "MON" button, the following registration information is displayed on the LCD.

FORWARD - ALL

XXXXXXXXXX 09:00 am

Service Conditions

- ✎✎The OMS can determine whether or not to use the call forward function.
- ✎✎An extension cannot register with more than two call-forward functions at the same time.
- ✎✎If an extension requests for another call forward registration by the call forward registration code while it is already registered to a call forward, the previous call forward will be automatically changed.
- ✎✎If an extension that is registered to a call forward hooks off the handset, it will first hear the confirmation tone and then hear the dial tone.
- ✎✎In case of registering with the call forward from DKTU to outside subscribe, up to 12 digits can be displayed.
- ✎✎An extension cannot perform the call forward to the extension representative attendant.
- ✎✎An extension cannot perform the call forward to the hot line subscribers.
- ✎✎It is not possible to assign CFWD to itself.
- ✎✎The extensions in "Class E" or lower cannot register with the call forward - unconditional to an external number.
- ✎✎If the DND function is registered, it needs to cancel this function and then register with the call forward function.
- ✎✎The call forward to outside subscriber does not provide the service if the number of dial except for the trunk access code exceeds 22 digits.

Data Generation

☞☞ Registration Code

[2.1 System Numbering Plan – Feature Code Plan CFWD REG.(Unconditional)]

☞☞ Assign whether or not to use the call forward

[3.1 Extension Information – Feature Restriction 2. Call Forwarding]

☞☞ Assign the call forward alert tone

[2.4 System Tone Parameter – Call Forward Alert Tone]

Interactions

☞☞ It is possible to register the call forward using buttons or registration code while the absence message is registered, but the call forward using codes can be used and in this case, the absence message will be deleted.

☞☞ The operator can cancel the registered call forward compulsorily if necessary.

☞☞ If the absence message is registered to a DKTU in which the call forward is registered, the call forward will be canceled.

☞☞ If the DND is registered, the extension should cancel the function before registering the call forward.

☞☞ When registering with the call forward to an outside subscriber, the OMS checks the extension class to allow/deny.

Call Forward – Unconditional from Outside Call

General Description

If an extension registers with the call forward - unconditional, all calls incoming from external subscriber to the extension are unconditionally forwarded to other extensions or outside subscribers assigned, regardless of the extension status (busy, idle or DND).

Operation Sequence

☞☞ Call forward – unconditional from SLT (single line telephone) to extension

- 1 An extension hooks off the handset.
- 2 The extension dials the call forward – unconditional code (Default: *526).
- 3 The extension enters an extension number where the call will be forwarded.
- 4 If the number is valid and the registration is successfully completed, the extension will hear the confirmation tone.

☞☞ Call forward – unconditional from SLT to outside subscriber

- 1 An extension hooks off the handset.
- 2 The extension dials the call forward – unconditional code (Default: *526).
- 3 The extension dials the access code.
- 4 The extension enters an external number.
- 5 The subscriber hooks on the handset after entering the number.

☞☞ Call forward – unconditional using buttons from DKTU to extension

- 1 An extension hooks off the handset or presses "MON" button.
- 2 The extension presses "DND/FWD" button. In this case, the following message is displayed on the LCD.

ENTER CALL FORWARD TYPE

- 3 The extension enters "6". In this case, the following message is displayed on the LCD.

ENTER A DIAL DIGIT

- 4 The extension dials an extension number.
- 5 If the extension number is valid and the registration is successfully completed, the extension hears the service set tone, the "DND/FWD" LED turns on and flashes, and the following message is displayed on the LCD.

FORWARD – ALL(E)

XXXX 09:00 am

☞☞ Call forward – unconditional using buttons from DKTU to outside subscriber

- 1 An extension hooks off the handset or presses "MON" button.

- 2 The extension presses "DND/FWD" button. In this case, the following message is displayed on the LCD.

ENTER CALL FORWARD TYPE

- 3 The extension enters "6". In this case, the following message is displayed on the LCD.

ENTER A DIAL DIGIT

- 4 The extension dials the trunk access code.

Note: if the trunk access code is not correct, the warning tone will be sent out. In this case, the extension should resume the DKTU and then restart the registration from the beginning.

- 5 The extension dials an outside subscriber's number.

- 6 After entering the outside subscriber's number to be forwarded and pressing "HOLD/SAVE" button, the extension hears the service set tone, and the "DND/FWD" LED turns on and flashes.

- 7 If the extension hooks on the handset or presses "MON" button, the following registration information is displayed on the LCD.

FORWARD - ALL(E)

XXXXXXXXXX 09:00 am

Service Conditions

- ✍✍ The OMS can determine whether or not to use the call forward function.
- ✍✍ An extension cannot register with more than two call-forward functions at the same time.
- ✍✍ If an extension requests for another call forward registration by the call forward registration code while it is already registered to a call forward, the previous call forward will be automatically changed.
- ✍✍ If an extension that is registered to a call forward hooks off the handset, it will first hear the confirmation tone and then hear the dial tone.
- ✍✍ In case of registering with the call forward from DKTU to outside subscribe, up to 12 digits can be displayed.
- ✍✍ An extension cannot perform the call forward to the extension representative attendant.
- ✍✍ An extension cannot perform the call forward to the hot line subscribers.
- ✍✍ It is not possible to assign CFWD to itself.
- ✍✍ The extensions in "Class E" or lower cannot register with the call forward - unconditional to an external number.
- ✍✍ If the DND function is registered, it needs to cancel this function and then register with the call forward function.
- ✍✍ The call forward to outside subscriber does not provide the service if the number

of dial except for the trunk access code exceeds 22 digits.

Data Generation

Registration Code

[2.1 System Numbering Plan – Feature Code Plan CFWD REG.(Uncondition)
From Outside]

Assign whether or not to use the call forward

[3.1 Extension Information – Feature Restriction 2. Call Forwarding]

Assign the call forward alert tone

[2.4 System Tone Parameter – Call Forward Alert Tone]

Interactions

It is possible to register the call forward using buttons or registration code while the absence message is registered, but the call forward using codes can be used and in this case, the absence message will be deleted.

The operator can cancel the registered call forward compulsorily if necessary.

If the absence message is registered to a DKTU in which the call forward is registered, the call forward will be canceled.

If the DND is registered, the extension should cancel the function before registering the call forward.

When registering with the call forward to an outside subscriber, the OMS checks the extension class to allow/deny.