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Description of the fax-subinterface between linklevel and hardwarelevel of isdn4linux.

The communication between linklevel (LL) and hardwarelevel (HL) for fax is based on the struct T30_s (defined in isdnif.h).
This struct is allocated in the LL.
In order to use fax, the LL provides the pointer to this struct with the command ISDN_CMD_SETL3 (parm.fax). This pointer expires in case of hangup and when a new channel to a new connection is assigned.

Data handling:
In send-mode the HL-driver has to handle the <DLE> codes and the bit-order conversion by itself.
In receive-mode the LL-driver takes care of the bit-order conversion (specified by +FBOR)

Structure T30_s description:

This structure stores the values (set by AT-commands), the remote-capability-values and the command-codes between LL and HL.

If the HL-driver receives ISDN_CMD_FAXCMD, all needed information is in this struct set by the LL.
To signal information to the LL, the HL-driver has to set the parameters and use ISDN_STAT_FAXIND.
(Please refer to INTERFACE)

Structure T30_s:

All members are 8-bit unsigned (__u8)

- resolution
- rate
- width
- length
- compression
- ecm
- binary
- scantime
- id[]

Local faxmachine's parameters, set by +FDIS, +FDCS, +FLID, ...

- r_resolution
- r_rate
- r_width
- r_length
- r_compression
- r_ecm
- r_binary
- r_scantime
- r_id[]

Remote faxmachine's parameters. To be set by HL-driver.

- phase
Defines the actual state of fax connection. Set by HL or LL
depending on progress and type of connection.
If the phase changes because of an AT command, the LL driver
changes this value. Otherwise the HL-driver takes care of it, but
only necessary on call establishment (from IDLE to PHASE_A).
(one of the constants ISDN_FAX_PHASE_[IDLE,A,B,C,D,E])

- direction
Defines outgoing/send or incoming/receive connection.
(ISDN_TTY_FAX_CONN_[IN,OUT])

- code
Commands from LL to HL; possible constants :

ISDN_TTY_FAX_DR	signals +FDR command to HL
ISDN_TTY_FAX_DT	signals +FDT command to HL
ISDN_TTY_FAX_ET	signals +FET command to HL

Other than that the "code" is set with the hangup-code value at
the end of connection for the +FHNG message.

- r_code
Commands from HL to LL; possible constants :

ISDN_TTY_FAX_CFR	output of +FCFR message.
ISDN_TTY_FAX_RID	output of remote ID set in r_id[] (+FCSI/+FTSI on send/receive)
ISDN_TTY_FAX_DCS	output of +FDCS and CONNECT message, switching to phase C.
ISDN_TTY_FAX_ET	signals end of data, switching to phase D.
ISDN_TTY_FAX_FCON	signals the established, outgoing connection, switching to phase B.
ISDN_TTY_FAX_FCON_I	signals the established, incoming connection, switching to phase B.
ISDN_TTY_FAX_DIS	output of +FDIS message and values.
ISDN_TTY_FAX_SENT	signals that all data has been sent and <DLE><ETX> is acknowledged, OK message will be sent.
ISDN_TTY_FAX_PTS	signals a msg-confirmation (page sent successful), depending on fet value: 0: output OK message (more pages follow) 1: switching to phase B (next document)
ISDN_TTY_FAX_TRAIN_OK	output of +FDCS and OK message (for receive mode).

ISDN_TTY_FAX_EOP	signals end of data in receive mode, switching to phase D.
ISDN_TTY_FAX_HNG	output of the +FHNG and value set by code and OK message, switching to phase E.

- badlin
Value of +FBADLIN

- badmul
Value of +FBADMUL

- bor
Value of +FBOR

- fet
Value of +FET command in send-mode.
Set by HL in receive-mode for +FET message.

- pollid[]
ID-string, set by +FCIG

- cq
Value of +FCQ

- cr
Value of +FCR

- ctcrty
Value of +FCTCRTY

- minsp
Value of +FMINSP

- phcto
Value of +FPHCTO

- rel
Value of +FREL

- nbc
Value of +FNBC (0,1)
(+FNBC is not a known class 2 fax command, I added this to change the automatic "best capabilities" connection in the eicon HL-driver)

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