Kofax Communication Server

PBX Requirements Technical Manual

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KOFAX

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Preface

This manual summarizes all the PBX features/supplementary services that are necessary for successful Kofax Communication Server Fax and/or Voice integration.

Chapter 1

General PBX Requirements

There are two functionality classes:

1. **Standard functionality**
   This should work with almost every PBX type that supports appropriate protocols, no PBX integration testing with TCINT assistance is necessary prior to the customer installation.
2. **Extended functionality**
   Kofax guarantees to deliver working functionality according to the supported protocol specifications. But as implementations on different PBX platforms may be more or less incompatible, the PBX integration testing with that PBX platforms that has not been tested so far is necessary to be performed prior to the customer installation (see the "Kofax PBX Integration Program")

PBX feature	Description and Usage	Supported standard protocols	Functionality Class/PBX Integration Procedure
Basic Call	Basic in and out call function, necessary for both fax and voice as well	EuroISDN, QSIG, 1TR6, 4ESS (AT&T)	Standard PBX integration tests not necessary
Advice of Charge (AOC)	Cost accounting for outgoing fax and voice calls	EuroISDN, 1TR6	Standard PBX integration tests not necessary
		QSIG	Extended PBX integration tests necessary
Message Waiting Indication (MWI)	Indication of an incoming message on the telephone's MWI lamp	QSIG	Extended PBX integration tests necessary
Call Transfer (CT)	Switching of two calls via the PBX for TC/Attendant, DialbyName, SimpleCTI functions	QSIG	Extended PBX integration tests necessary
Path Replacement	Call route optimization after the Call Transfer, necessary for each application using the CallTransfer	QSIG	Extended PBX integration tests necessary
Call Diversion (CFU, CFNR and CFB)1	Redirecting of incoming calls to the Kofax Voice server, necessary for basic TC/ VoiceAccess functionality	EuroISDN QSIG	Extended PBX integration tests necessary

(1) - **CFU**: Call Forward Unconditional, **CFNR**: Call Forward not Responding, **CFB**: Call Forward on Busy

Chapter 2

PBX QSIG/PSS1 Requirements

As the standard PBX interconnection protocol family QSIG/PSS1 is the most perspective for any PBX integration worldwide, detailed QSIG PBX requirements are summarized within this section.

QSIG Protocol Background

The QSIG/PSS1 family of standards is a comprehensive suite of standards based on DSS1 for corporate ISDN networks. A couple of extensions to DSS1 were standardized to take account of the special needs of corporate ISDN networks (*DSS1* stands for a set of global ISDN signaling standards, to access public ISDN services, in Europe informally known as EURO-ISDN).

QSIG standards are produced by ECMA. The ECMA QSIG standards are submitted directly to ISO/IEC, for adoption as global ISO PSS1 standards rather than merely as European standards. After successful adoption as ISO/IEC International Standards (ISs), ECMA then requests ETSI, the formal body for issuing European Union telecommunications standards, to adopt those same ISO/IEC ISs by means of what ETSI call "Endorsing ETSs" or "Endorsing ENs" for Europe.
If, in the process of adoption by ISO, modifications are made then the original ECMA standards are aligned with the ISO version.

Note The present ECMA, ISO/IEC and ETSI differ more or less from the original ECMA standards adopted about 1993-1995 therefore also the information on standards version is listed.

The QSIG Feature Table

As the QSIG/PSS1 protocol suite is being standardized by three different standardization bodies – ECMA, ETSI and ISO/IEC – the feature table lists all present standards from all three bodies for each feature as different PBX features may have been implemented according to different standards.

Please fill in all details you are aware of:

1. If you know the exact standard number for each feature (incl. edition and release date), select the boxes in the proper column (ECMA, ETSI or ISO).
2. If the PBX supports different standards or different edition and release date, write them on the separate sheet.
3. Also answer questions on internal PBX feature implementations listed in the feature table.

PBX QSIG/PSS1 Feature Requirements for BRI and PRI access types PBX Type: …….... Vendor: …….... PBX SW release: ……..... PBX Implementation according to standard: **ECMA** □ **ETSI** □ **ISO/IEC** □				
Integration (Fax/Voice)	QSIG Service Name	ECMA Standard date of publication	ETSI Standard date of publication	ISO/IEC Standard date of publication
Fax and Voice	**Basic Call** (64kb/s unrestricted, 3.1kHz audio and speech bearer services) **Yes**: X **No**: □	ECMA-142 2nd edition June 1997 ECMA-143 3rd edition June 1997 **Yes**: □ **No**: □	EN 300 171 v1.2.1 EN 300 172 v1.4.1 September 1997 **Yes**: □ **No**: □	ISO/IEC 11574 1994 ISO/IEC 11572 2nd edition 1997 **Yes**: □ **No**: □
	Generic Functional Procedures **Yes**: X **No**: □	ECMA-165 3rd edition June/97 **Yes**: □ **No**: □	ETS 300 239 2nd edition Nov/95 **Yes**: □ **No**: □	ISO/IEC 11582 1995 **Yes**: □ **No**: □
	Advice of Charge (AOC) **Yes**: □ **No**: □	ECMA-211/212 2nd edition June/97 **Yes**: □ **No**: □	EN 301 254/264 v1.1.1 Oct/98 **Yes**: □ **No**: □	ISO/IEC 15049/15050 1997 **Yes**: □ **No**: □
Voice	**Message Waiting Indication (MWI)** **Yes**: □ **No**: □	ECMA-241/242 2nd edition Sep/97 **Yes**: □ **No**: □	EN 301 260/255 v1.1.1 Oct/98 **Yes**: □ **No**: □	ISO/IEC 15505/15506 1997 **Yes**: □ **No**: □
	Call Transfer (CT) **CT by join**: **Yes**: □ **No**: □ **CT by reroute**: **Yes**: □ **No**: □	ECMA-177/178 2nd edition Sep/97 **Yes**: □ **No**: □ **Yes**: □ **No**: □	ETS 300 260 2nd edition May/96 ETS 300 261 2nd edition Nov/95 **Yes**: □ **No**: □ **Yes**: □ **No**: □	ISO/IEC 13865/13869 1995 **Yes**: □ **No**: □ **Yes**: □ **No**: □
	Does the primary call have to be put on HOLD prior to the Call Transfer request? **Yes**: □ **No**: □			
	Path Replacement **Yes**: □ **No**: □	ECMA 177/178 2nd edition Sep/97 **Yes**: □ **No**: □	ETS 300 258 2nd edition May/96 ETS300 259 2nd edition Nov/95 **Yes**: □ **No**: □	ISO/IEC 13863/13874 1995 **Yes**: □ **No**: □
	Does the PBX invoke Path Replacement after Call Transfer by join? **Yes**: □ **No**: □			
	Call Diversion (CFU, CFNR and CFB) **Yes**: □ **No**: □	ECMA-173/174 2nd edition June 1997 **Yes**: □ **No**: □	ETS 300 256 2nd edition May/96 ETS 300 257 2nd edition Nov/95 **Yes**: □ **No**: □	ISO/IEC 13872/13873 1995 **Yes**: □ **No**: □

Which of the two network routing algorithms is used for CFU, CFB and CFNR:

	Only Forward Switching	Only Rerouting	Both, Configurable
CFU	**Yes**: □	**Yes**: □	**Yes**: □
CFB	**Yes**: □	**Yes**: □	**Yes**: □
CFNR	**Yes**: □	**Yes**: □	**Yes**: □

Yes, always: □ **No, never**: □ **Yes, but can be switched off per configuration**: □

CFU: Call Forward Unconditional, **CFNR**: Call Forward not Responding, **CFB**: Call Forward on Busy

Forward switching is the network rerouting algorithm which performs the call diversion by joining together the first connection from user A to user B and a second, new connection between user B and user C.

Rerouting is the network rerouting algorithm which performs the call diversion by replacing the connection from user A to user B by another connection from user A to user C.