

# **IPTS RFP Guidelines for the Discerning Buyer**

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# Presentation Topics

- RFP Basics
- IPTS Performance Specifications
- 10 Key IPTS RFP Issues
- Concluding Remarks

# Formal Product Selection Processes

- There are several types of formal evaluation/selection documents:
  - Request for proposal (*RFP*): Solicits requested information for vendor capabilities, system specifications and accompanying price quote
  - Request for quote (*RFQ*): Solicits a price quote for known product
  - Request for information (*RFI*): Solicits general and specific vendor and product information
- **Be Warned!!**
  - Consultants are likely to use their boilerplate RFP template regardless of individual & unique customer requirements
  - In response, system vendors almost always use boilerplate responses to RFP requirements/questions

# But First Things First: Vendor Selection Criteria

- Distributor/supplier viability, e.g., years in business, finances, management & technical staff
- System and applications expertise (voice, data, messaging, networking, contact center, mobile, et al): training and certification
- Qualified customer references
- Pre- and post-installation support services
  - Project management
  - Customer needs assessment
  - Network/security assessment
  - Installation & maintenance procedures
  - Administration and applications managed services offerings
- Available financial service offerings, e.g., leasing

# IPTS RFP Performance Specifications: The Basics

- General IP Telephony System (IPTS) description
- System architecture design, technology attributes
- Terminal equipment (station user desktop/mobile, attendant position)
- Generic software features (station, attendant, system)
- Systems Management (hardware requirements & software tools)

# **IPTS RFP Performance Specifications: The Application Options**

- Networking: campus, remotes, multi-system
- Messaging: voice, integrated/unified
- Contact Center: inbound/outbound, voice calls, mixed media calls, MIS reporting, peripherals
- Mobile Communications: WLAN, Cellular,
- Unified Communications: presence, call screening and routing, conferencing, collaboration

# The Fundamentals for Preparing Specifications

- Performance specifications should be **specific**
  - Attempt to define all terms that are not in general usage
  - Avoid misleading and ambiguous statements
  - No generalizations
- Highlight potential Single Points Of Failure (**SPOF**): processing, memory, switching, power, port interface links
- **Note**: vendors will attempt to obfuscate their responses if they do not truly satisfy specific requirements
  - Demand an answer in the affirmative
  - **Prohibit** highly detailed and convoluted explanations and/or references to “see attachment”

# **IPTS Tech Specs Requiring Utmost Clarity:**

## ***Common Control***

- Call processing
  - Identify processor type (main, local, gatekeeper, adjunct, desktop)
  - Identify operating system used for each and every major system function (basic call processing, systems management, peripheral applications)
  - Identify loaded Busy Hour Call Completion (BHCC) rating for proposed system configuration
- Memory elements by design type & capacity
  - Generic software program
  - Customer database

# **IPTS Tech Specs Requiring Utmost Clarity:**

## ***Transmission/Switching***

- Switching network: encoding and transmission platforms
  - Circuit switching elements (center stage & local TDM buses)
  - Packet switching elements: Ethernet LAN
- Circuit switching network capacity
  - Inter-TDM bus transmission capacity
  - Talk slots/simultaneous conversations
  - Traffic rating (Station CCS @ P.01)
- Ethernet switching network QoS attributes
  - Bandwidth
  - Latency
  - Jitter
  - Echo
  - Packet loss

# **IPTS Tech Specs Requiring Utmost Clarity:**

## ***Port Interfaces***

- TDM port cabinet/carrier capacities
  - Physical dimensions & weight
  - Self standing or rack mounted
  - # Cabinet/carriers
  - # Card slots
  - Card slot mapping restrictions
- Circuit interface board types & capacities
  - Analog/digital stations
  - Analog/digital trunks
  - Media gateways for stations/trunks
    - Media channel connections
    - Call control signaling links

# IPTS Tech Specs Requiring Utmost Clarity: *Power*

- Main system components
  - Common control & peripheral application servers
  - TDM port carriers/Media Gateways
  - LAN switches/routers
  - Desktop IP telephone instruments
- Disaster recovery & holdover time
  - Battery backup
  - UPS

# Getting The Right Response

- Vendors must include statements positively affirming compliance with any and all requirements
- Requirements should be designated as belonging to one of the following categories:
  - Mandatory: Make or Break
  - Standard: Must be included in both system configuration and pricing proposals
  - Optional: Must be fully supported by proposed system, but not included in configuration or pricing proposals

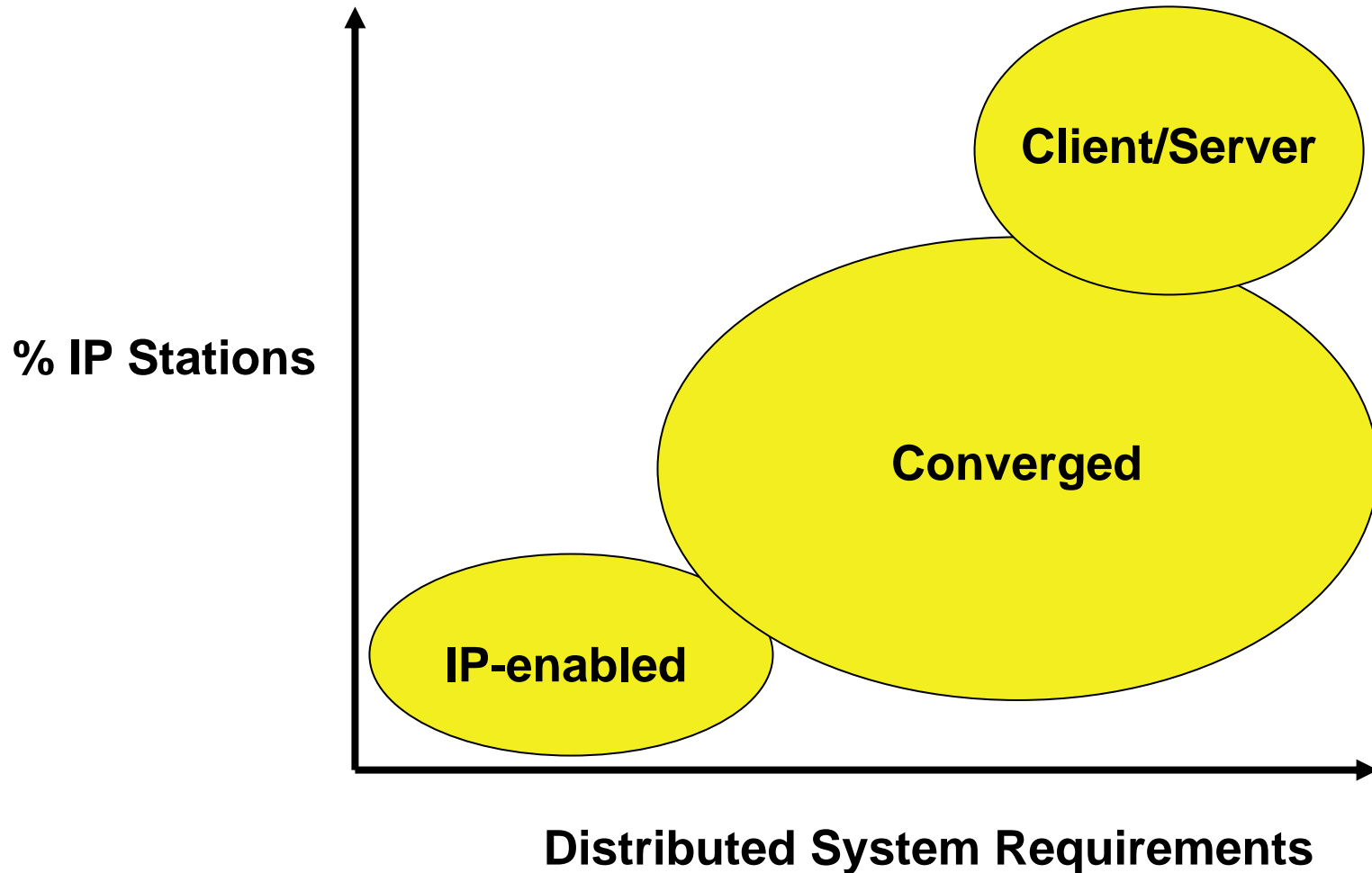
# 10 Key RFP Issues Specific to an IPTS

- Core IPTS design
- IPTS Gatekeeper
- Media gateways
- SIP
- E911
- Redundancy/Survivability
- Security
- IP voice clients
- Multiparty Conferencing
- VoIP monitoring

# IPTS Core Design

- Which design is right for you?
  - IP-enabled: circuit switched with IP media gateways
  - Converged: mix of circuit and packet switched design components
  - Client/Server: packet switched with non-IP media gateways
- Primary decision factors
  - Percent IP stations (today, tomorrow)
  - Geographic configuration (single site, campus, multiple sites)
  - Existing LAN/WAN infrastructure

# IPTS Positioning



# IPTS Gatekeeper

- The gatekeeper is a communications protocol element that provides:
  - Address translation and control access to the LAN for terminals and gateways
  - Bandwidth management
  - Location of media gateways
  - Maintains a registry of all devices in the multimedia network
- How is gatekeeper functionality provided?
  - Primary call telephony server?
  - Dedicated call signaling servers?
  - Optional circuit boards?
- Redundancy?
  - # equipped servers/circuit boards
  - # Ethernet uplinks per server/circuit board

# IPTS Media Gateways

- Media gateways are devices that convert communications and control signaling transmissions from one format to another, e.g. circuit switched TDM/PCM to packet switched IP
- How is media gateway function provided?
  - Integrated circuit board (TDM port carrier/Ethernet switch/Router)
  - Standalone carrier
  - Desktop module

# Media Gateway Issues

- Media Gateway type
  - Station, only (analog, digital, or IP)
  - Trunk, only (analog, digital/PRI)
  - Universal (station and trunk; analog, digital, or IP)
  - Embedded gatekeeper signaling interface?
- What is media channel capacity, and is it voice codec dependent?
- What VoIP communications protocol (H.323, H.248, SIP, et al) is supported?
- Redundancy options: load sharing, shared or dedicated standby

# Session Initiation Protocol (SIP)

- SIP is a text-based communications protocol based on HTTP and MIME, which makes it suitable and very flexible for IP telephony applications
- Level of SIP support?
  - Station (desktop)
  - Trunk (network)
  - Third party application servers
- How is SIP communications and interface support provided?
  - Native to generic software (full or partial feature provisioning)
  - Optional software (partial feature provisioning)
  - Media gateway/proxy server

# E911

- Potential E911 problem issues
  - Portability of IP voice clients (plug-and-play, wireless)
  - Distributed remote facilities and voice clients (teleworkers)
- E911 requirements
  - Are E911 calls automatically directed to the PSAP located in nearest proximity to the caller regardless of caller's location?
  - Are details of the caller's physical location (desktop area/closet switch) available and passed from the enterprise system to the PSAP?
  - How often is the locator database automatically updated and synchronized with the local E911 PSAP? Or are updates performed manually?
- Are full-featured E911 features native to IPTS generic software or is an optional application server required for advanced capabilities?

# IPTS Redundancy/Survivability

- Call & media processing
  - Seamless, hot standby resiliency? Downtime? Feature/function loss?
  - # Available backups
  - Centralized or distributed processor elements?
  - Backup processors physically connected or LAN/WAN?
- Alternative PSTN call control signaling path & bandwidth requirements?
- Network failover resiliency across systems?
  - # Available backups?
  - Downtime?
  - Distance limitations?
  - Database synchronization?
- Separation of bearer and control signaling transmissions, i.e., PSTN and WAN?
- Overflow of VoIP trunk calls to PSTN with programmable thresholds? Optional flowback?

# Desktop IP Telephone Basic Design Specifications

- What IP telephony communications protocols are supported: H.323 , SIP, proprietary, other
- What embedded voice codecs are supported? G711, G729a/b, G.722, other
- # integrated Ethernet switch ports?
- Integrated peripheral interfaces? I/R, Bluetooth, USB
- Integrated thin client browser? HTML, XML, WML, WAP, Java
- Embedded echo canceller?
- Embedded QoS software? 802.11p/Q, jitter buffers

# Desktop IP Telephone Display Specifications

- Integrated display field or add-on (module, monitor)?
- Display size? physical dimensions, # pixels
- Display visuals? monochromatic, e.g. gray-scale, or color (# colors)
  - Back-lit display?
  - Customer selectable fonts and sizes?
- Station user interaction? softkeys, cursor control, touchscreen, mouse, voice)
- Image types? text, graphics, photographic, video
  - Concurrent multiple image types or single image type per display view?
- Screensaver?

# Desktop IP Telephone Productivity Applications (1)

- Integrated application menus and/or peripheral server requirements?
  - Homepage menu?
  - Simultaneous voice communications & application processing?
- Data Entry?
  - Numeric dialpad
  - Soft, pop-up keyboard on the telephone's integrated display screen
  - Pull-out alphanumeric keyboard on the phone
  - External keyboard and/or mouse (identify interface connector used, e.g. USB)
- Audio and/or video streaming?
- Audio and/or visual alerts?

# Desktop IP Telephone Productivity Applications (2)

- Directory functions
  - Integrated, External
  - Autodialing (one click dialing)
  - Alpha entry procedures: single or multiple keystrokes
  - Directory pruning
  - Auto-display or menu List
  - Directory record fields (name, number, department, et al)
- Messaging
  - Visual voice mailbox
  - Email
  - Integrated Messaging

# IPTS Voice Conferencing

- Multi-party add-on conferencing is an established PBX feature, but how are calls handled?
  - TDM transmission bus talk slots?
  - Dedicated TDM port carrier, Ethernet switch, or router circuit board?
  - Dedicated conferencing bridge server?
- Capacity issues
  - Maximum # simultaneous conference parties per system & per conference call?
  - Maximum # internal & external parties per call?
- How is a Meet Me Conference handled & # Parties/Call?
  - Native generic software?
  - Peripheral conference bridge?

# IPTS VoIP Monitoring

There are a variety of VoIP Quality of Service (QoS) measurement and monitoring requirements unique to an IPTS that are useful for assessing system performance and voice quality, such as:

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>• Call timestamp information, including roundtrip delay time</li><li>• Transmission stream identification information</li><li>• Stream source and destination data for IP address, RTP port, and SSRC for which the performance report is associated</li><li>• Voice codec usage</li></ul> | <ul style="list-style-type: none"><li>• Source audio sample rates</li><li>• Frame size</li><li>• Packet loss concealment</li><li>• Jitter buffer information, including type, adaptation rate, nominal delay and maximum delay</li><li>• Packet loss information, including ratio and discard rate</li></ul> |
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# Concluding Remarks

- Selecting a new IPTS can be a harrowing experience: There are significant differences between a digital PBX RFP and an IPTS RFP
- Buyers must do their homework before beginning a formal new system selection process
  - Know what products and system capabilities are available before defining new product & application requirements
  - Determine the wide-ranging communications needs of the intended user population
- Leverage the knowledge and expertise of an expert: in-house staff, outside consultant, or combination or both
- ***Remember that a RFP process should be dynamic and flexible: initial requirements and selection criteria need not be cast in concrete***