



## **Power 911 Intelligent Workstation**

**OVERVIEW:**  
Avaya G3 (Lucent Definity) PBX Telephony

September 2003

## Introduction

This document provides an overview of the functionality and architecture of a PSAP system using an Avaya Definity (formerly Lucent G3) PBX for Telephony, under control of a Positron Public Safety Systems Power 911 IWS (Intelligent Workstation).

Please note that due to product evolution, enclosed specifications are subject to change.

## Highlights

Positron's Definity/G3 based IWS 9-1-1 system is by far the most advanced and reliable, providing all of the following:

### **Full complement of NENA Recommended Interfaces**

The Positron solution includes a Life Line 100 E9-1-1 ANI/ALI Controller, which provides the standard interfaces mandated by NENA.

### **CAMA and ISDN-BRI 9-1-1 Support**

The system's Life Line 100 E9-1-1 ANI/ALI Controller supports CAMA 9-1-1 and/or optionally ISDN-BRI 9-1-1.

### **Intelligent Workstation with First-Party CTI Call Control of a G3 PBX**

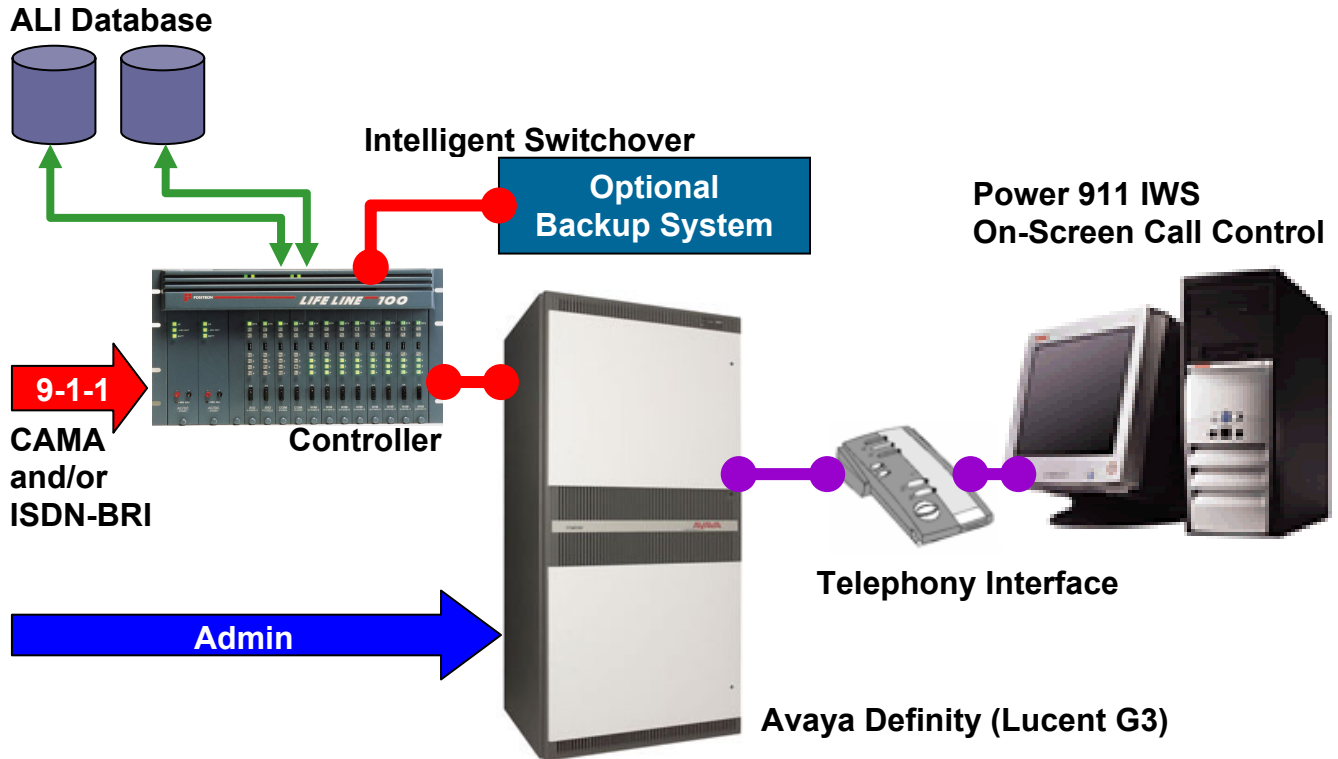
Positron's Power 911 Intelligent Workstation (IWS) provides on-screen control of G3 call handling in an E9-1-1 environment.

The First-Party call control (call control interface at each position) ensures that there is no single point of failure that would negatively impact call control at more than one position.

### **Optional Backup Mechanism in case of G3 PBX Failure**

Positron is the only vendor offering an optional backup mechanism that allows 9-1-1 calls to be answered in the event of failure of the G3 PBX. The Life Line 100 controller can, upon PBX failure, re-route the 9-1-1 Trunks to a system of backup phones. Without the backup mechanism, the PBX effectively becomes a system-wide single point of failure.

## System Architecture



## Call Flow Overview

- E9-1-1 Trunks (**CAMA** and/or **ISDN-BRI**) carry calls from the tandem to the Life Line 100 ANI/ALI Controller, which then feeds the lines to the G3 PBX.
- Administrative lines (7-Digit Emergency, Ringdowns, etc.) are fed directly to the Definity/G3 PBX.
- The Definity/G3 makes calls available to the answering positions via the PBX's Automatic Call Distribution (**ACD**) mechanism and/or the PBX's common line appearances (i.e. **bridged appearance**).
- **First-Party Call Control** - Each Power 911 Intelligent Workstation is equipped with its own independent telephony interface, providing on-screen call control with no single point of failure.

## Life Line 100 E9-1-1 ANI/ALI Controller

The Life Line 100 E9-1-1 ANI/ALI Controller is designed to meet the strict demands of E9-1-1. It supports **MF**, **Enhanced MF** and **ISDN-BRI**, as well as **FCC Phase I and II** wireless requirements.

The Life Line exceeds industry reliability standards and provides exceptional functionality.

### Performance

The non-blocking design of the Life Line 100 ensures that all calls are processed simultaneously, eliminating any potential bottleneck situations.

Each trunk interface contains a dedicated MF receiver, allowing the Life Line 100 to decode the ANI of multiple calls faster. ALI is requested immediately after ANI is decoded, and often available prior to the call being answered.

### The Life Line 100 controller provides:

- Direct Interface to E9-1-1 Trunks
- ANI Decoding (MF and Enhanced MF)
- ALI Lookup
- NENA mandated standard interfaces
- Redundancy for 9-1-1 related functions
- Optionally: Fallback Mechanism to Backup Phone System



- **AC/DC** provides power
- Fully redundant

- **SIO** runs 12 display ports
- Each port is independent
- Fully redundant

- **COM** provides all inter-module communications via dedicated processor
- Communication to external devices (ALI,)
- Fully redundant
- Performs ALI dip as soon as ANI is received, typically before call is answered

- **NIMs** perform call processing, central office interface and telephone functions
- Every NIM functions independently of the COM module, or other NIM's on the shelf (including reception and decoding of MF tones)

## Supported Telephony Features

Power 911 Intelligent Workstations support the following telephony line types and features when used with an Avaya G3 PBX:

### ***Supported Line Types***

- 9-1-1 CAMA trunks
- ISDN-BRI 9-1-1 (optional)
- Administrative lines with or without Caller ID
- Virtual ring down lines (regular loop-start lines where CO assures the ring signaling)

### ***Telephony Features***

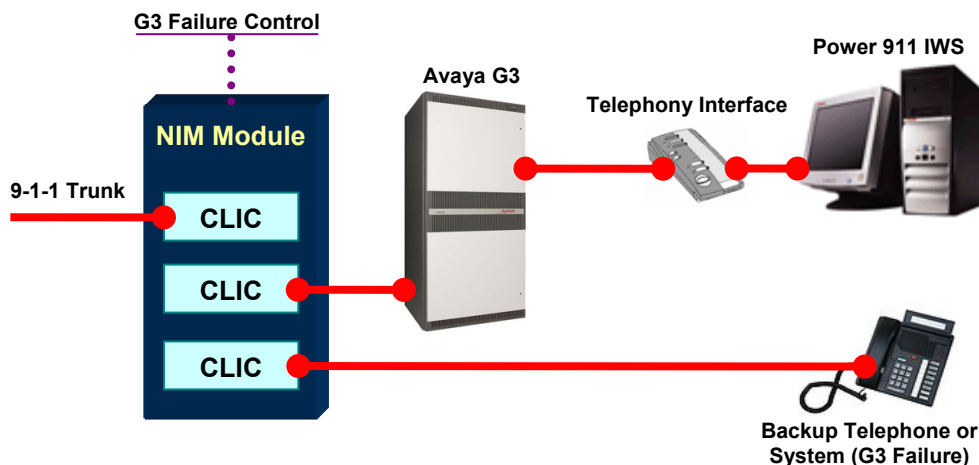
- Automatic agent logon/logoff on headset detection
- AfterCallWork
- AutoIn / Manual In
- AuxWork (with Reason Codes)
- DoNotDisturb
- Conference (same line)
- NoHold Conference
- Blind Transfer
- Mute
- Hold
- Park / Unpark
- Call Forward
- Supervisory Listen & Join features
- ACD in either forced or non-forced connect modes
- Shared lines via the bridged call appearances feature
- Caller ID on administrative lines (if equipped)
- Display of ACD Queue statistics

## Optional Backup Mechanism in case of G3 PBX Failure

Positron's design philosophy has always been to ensure reliability via redundancy and distributed processing, with the goal of **No Single Point of Failure** in mind. Given this orientation, we felt that PBX-based 9-1-1 systems should be afforded the same level of fault tolerance. We therefore engineered a solution that provides for a fallback should the PBX fail.

The backup option equips each of the Life Line 100's NIMs (Network Interface Modules) with 3 "CLIC" line interfaces (instead of the standard 2). In the event of loss of the PBX, the Life Line 100 can under PSAP control switch all 9-1-1 trunks to the corresponding third CLICs which in turn are connected to plain old telephones, multi-line phones or a telephone system. **Regardless of failures in the PBX, 9-1-1 calls can still be answered.**

### G3 PBX Failure Backup Mechanism



The Backup Mechanism is highly intelligent. When switching to backup mode, both idle trunks and trunks with calls in progress are routed to the backup phone system. When switching back to normal operation, idle trunks are immediately switched back to the G3 PBX, while any calls in progress on the backup phone system remain on that system until the call is released.

## Backup Mechanism in case of Workstation Failure

Positron's Power 911 IWS / G3 implementation provides a telephony interface at each position. The interface also functions as a basic phone set independently of the workstation computer. This ensures that regardless of the state of the workstation PC, a call in progress remains connected.

One of three physical feature buttons on the set is configured with the "Park" feature. In the event of a workstation PC failure, if a call is in progress at that position, the conversation is maintained, and the calltaker has the option of Parking the call for retrieval from any other workstation.

"AuxWork" (with predefined reason code) is made available on another of the physical feature buttons. Pressing AuxWork prevents presentation of the next ACD call (you cannot log off with an active call).

The remaining physical feature button is configured for "Logout" and allows the calltaker to log off the PBX when there is no longer an active call.

## Getting More Information

To find out how Power 911 can give you the Power to Respond, please contact:

- your Regional Sales Manager ([www.positron911.com/corporate/contact](http://www.positron911.com/corporate/contact))
- email [info@positron911.com](mailto:info@positron911.com)
- call 800-443-3313