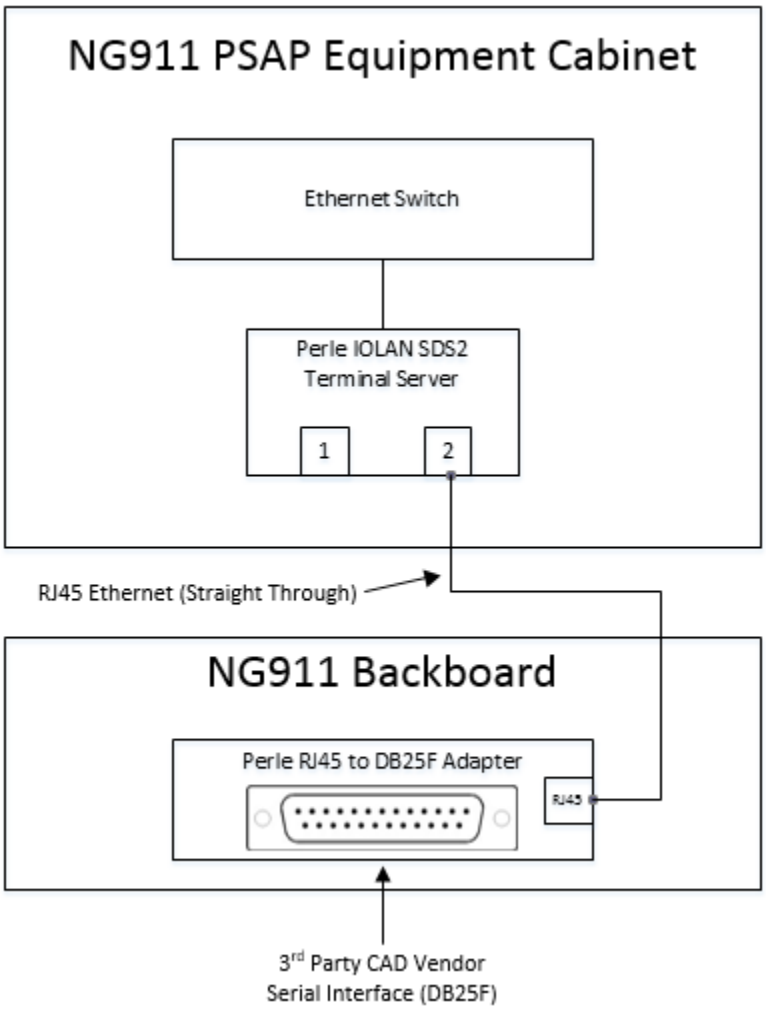
MA NG911 CAD Vendor Interface Connection

The following is a detailed description of the CAD interface connection between the NG911 system and the CAD vendor's equipment interface.

Serial Interface Handoff:

This diagram is for illustration purposes only.



The Perle IOLAN SDS2 is an Ethernet to Serial terminal server provided to enable CAD vendors to receive serial CAD spill data from the CPE within the NG911 system. The device, located within the NG911 equipment cabinet, includes two ports that will be configured for RS232 serial output. Port 1 is used for CPE output to the local digital logging recorder (DLR). Port 2 is used for CPE output to the local CAD system. A RJ45 cable will be extended by GDIT from Port 2 of the terminal server to the backboard located inside the server room. This cable will terminate to a Perle RJ45 to DB25F crossover adapter mounted on the backboard by GDIT.

The table below provides the pinouts for the Perle RJ45 to DB25F crossover adapter:

RJ45	DB25
2 (RTS)	5 (CTS)
3 (DSR)	20 (DTR)
4 (TXD)	3 (RXD)
5 (RXD)	2 (TXD)
6 (GND)	7 (GND)
7 (CTS)	4 (RTS)
8 (DTR)	6 (DSR) + 8 (DCD)

The serial hand-off to a CAD vendor's equipment will be one of two possible demarcations, depending on the site-specific configuration:

1. For sites where an existing Haddax box is currently used to interface with the legacy CAD system:

   The backboard mounted DB25F adapter from the NG911 system will terminate to the same port on the Haddox box where the legacy CAD output from the Vesta system previously terminated.

2. For sites where a Haddax box does not exist:

   The backboard mounted DB25F adapter from the NG911 system will mate directly with the serial cable feeding the existing legacy CAD system. The third party CAD system vendor will install a serial cable configured with a DB25M connector and terminate it to the backboard mounted DB25F adapter from the NG911 system.

   The RS-232 port is configured as follows:

   - Baud Rate: 9600
   - Data Bit: N
   - Parity: 1
   - Stop Bit None

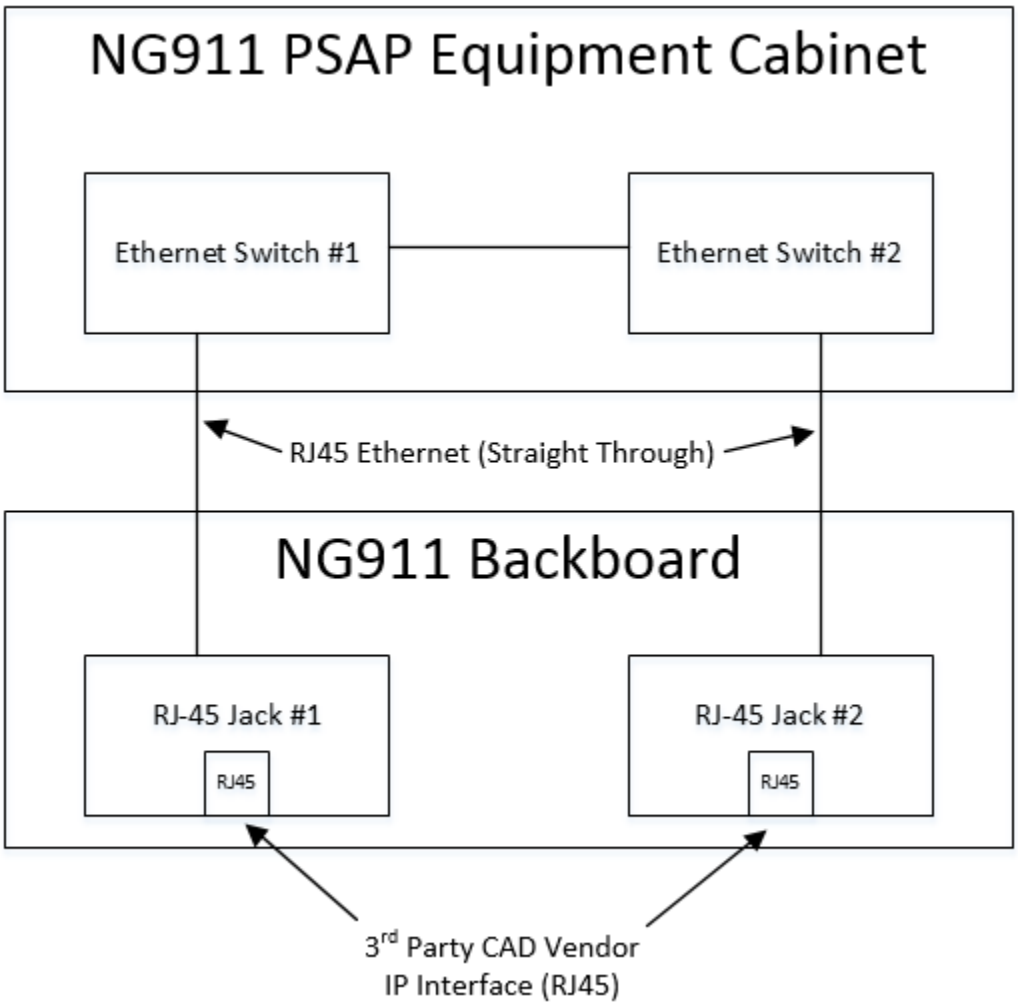
Sample Serial CAD Output:

```
                    201
BUSN 14:18 10/21
(508) 668-5555  COID=VERIZ
WALPOLE PD PSAP
972
  MAIN STREET

WALPOLE              MA

ESN=      MTN:  -  -
LAT:+00.0000000 LON:+00.0000000
ELV:+00000COF:      COP:


                    202
BUSN 14:01 10/21
(508) 668-5555  COID=VERIZ
WALPOLE PD PSAP
972
  MAIN STREET

WALPOLE              MA

ESN=      MTN:  -  -
LAT:+00.0000000 LON:+00.0000000
ELV:+00000COF:      COP:
```

Note: The above shows the modified Format 15 output provided by the NG911 CPE via the serial interface. The time stamp delivered within the CAD spill will include hours and minutes only, not the seconds.

IP Interface Handoff:

This diagram is for illustration purposes only.



Redundant Ethernet LAN switches reside inside the NG911 equipment cabinet. A single port from each switch will be cabled to separate surface mounted jacks located on the NG911 backboard. The backboard mounted jacks serve as the Ethernet hand-off to the 3rd Party CAD vendor's equipment. Dual jacks are provided for redundant connectivity between the NG911 network and PSAP CAD system. The IP interface for CAD requires two-way persistent connectivity between the NG911 network and local network where the CAD server resides. The data format output to the CAD will be in the Presence Information Data Format (PIDF) scheme.

Standard NG911 ALI Format

Row	Col	Field Name	Offset	Length	Field Characters	Supported	PIDF-LO Field Equivalent	Notes/Clarifications
0	1	Start of Text <STX>	0	1	1	Y	N/A	
0	2	Message Type	0	1	1	Y	N/A	This field is hardcoded to “2”, to indicate both ALI links active
0	3	Position Number	0	2	1-2	Y	N/A	Answering position number
0	5	Punctuation (\015)		1		Y		
1	1	Class of Serv. Desc.	0	4	1 - 4	Y	<LegacyClassOfService>	
1	6	Time	0	5	1 - 5	Y	N/A	CPE will insert timestamp to include seconds
1	12	Date	0	5	1 - 5	Y	N/A	CPE will insert date
1	17	Punctuation (\015)		1		Y		
2	1	Punctuation ('(')		1		Y		
2	2	Area Code (NPA)	0	3	1 - 3	Y	Area Code, Office Code, and TN are combined in PIDF field <contact> as TEL URI	CPE will break <contact> data into correct Area Code, Office Code, and TN components
2	5	Punctuation (')')		1		Y		
2	7	Office Code (NNX)	0	3	1 - 3	Y	Area Code, Office Code, and TN are combined in PIDF field <contact> as TEL URI	CPE will break <contact> data into correct Area Code, Office Code, and TN components
2	10	Punctuation ('-')		1		Y		
2	11	TN	0	4	1 - 4	Y	Area Code, Office Code, and TN are combined in PIDF field <contact> as TEL URI	CPE will break <contact> data into correct Area Code, Office Code, and TN components
2	17	Punctuation ('C')		1		Y		
2	18	Punctuation ('O')		1		Y		
2	19	Punctuation ('I')		1		Y		
2	20	Punctuation ('D')		1		Y		
2	21	Punctuation ('=')		1		Y		
2	22	Company Id	0	5	1 - 5	Y	<ProviderID>	
2	27	Punctuation (\015)		1		Y		
3	1	Customer Name	0	31	1 - 31	Y	<NAM> element within <civicAddress>	
3	32	Punctuation (\015)		1		Y		
4	1	House Number	0	8	1 - 8	Y	<HNO> element within <civicAddress>	
4	10	House # Suffix	0	4	1 - 4	Y	<HNS> element within <civicAddress>	
4	14	Punctuation (\015)		1		Y		

5	1	Prefix Directional	0	2	1 - 2	Y	<PRD> element within <civicAddress>	
5	4	Street Name	0	28	1 - 28	Y	<RD> element within <civicAddress>	CPE will break street names longer than 28 characters into the two legacy "Street Name" fields.
5	32	Punctuation (\015)		1		Y		CPE will replace punctuation with <space> character
6	1	Street Name	28	22	29 - 50	Y	<RD> element within <civicAddress>	CPE will break street names longer than 28 characters into the two legacy "Street Name" fields.
6	23	Punctuation (\015)		1		Y		
7	1	Telco Comments	0	30	1 - 30	N	N/A	CPE will insert 30 blanks into this field
7	31	Punctuation (\015)		1		Y		
8	1	City Name	0	28	1 - 28	Y	<COMM> element within <civicAddress>	CPE will use MSAG "Community" data for ALI City field data
8	30	State Abbr.	0	2	1 - 2	Y	<A1> element within <civicAddress>	
8	32	Punctuation (\015)		1		Y		
9	1	Location Information	0	13	1 - 13	Y	<LOC> element within <civicAddress>	Note: this is an ad hoc field in the LDB, which may include Suite numbers, Disability Information, etc.
9	21	Punctuation (\015)		1		Y		
10	1	Punctuation ('E')		1		Y		
10	2	Punctuation ('S')		1		Y		
10	3	Punctuation ('N')		1		Y		
10	4	Punctuation ('=')		1		Y		
10	5	ESN	3	3	4 - 6	N	N/A	CPE will insert 3 blanks into this field
10	13	Punctuation ('M')		1		Y		
10	14	Punctuation ('T')		1		Y		
10	15	Punctuation ('N')		1		Y		
10	16	Punctuation (':')		1		Y		
10	17	Pilot NPA	0	3	1 - 3	N	N/A	CPE will insert 3 blanks into this field
10	20	Punctuation ('-')		1		Y		
10	21	Pilot NNX	0	3	1 - 3	N	N/A	CPE will insert 3 blanks into this field
10	24	Punctuation ('-')		1		Y		
10	25	Pilot Number(Last 4)	0	4	1 - 4	Y	N/A	CPE will insert 4 blanks into this field

10	29	Punctuation (\015)		1		Y		
11	1	Punctuation ('L')		1		Y		
11	2	Punctuation ('A')		1		Y		
11	3	Punctuation ('T')		1		Y		
11	4	Punctuation (':')		1		Y		
11	5	Map Y Unedited	0	11	1 - 11	Y	Pos (Lat) from PIDF-LO Circle	
11	17	Punctuation ('L')		1		Y		
11	18	Punctuation ('O')		1		Y		
11	19	Punctuation ('N')		1		Y		
11	20	Punctuation (':')		1		Y		
11	21	Map X Unedited	0	11	1 - 11	Y	Pos (Lon) from PIDF-LO Circle	
11	32	Punctuation (\015)		1		Y		
12	1	Punctuation ('E')		1		Y		
12	2	Punctuation ('L')		1		Y		
12	3	Punctuation ('V')		1		Y		
12	4	Punctuation (':')		1		Y		
11	32	Punctuation (\015)		1		Y		
12	1	Punctuation ('E')		1		Y		
12	2	Punctuation ('L')		1		Y		
12	3	Punctuation ('V')		1		Y		
12	4	Punctuation (':')		1		Y		
12	5	Map Z Unedited	0	5	1 - 5	N	N/A	Z (Altitude) data not expected at present. CPE will insert 5 blanks into this field
12	11	Punctuation ('C')		1		Y		
12	12	Punctuation ('O')		1		Y		
12	13	Punctuation ('F')		1		Y		
12	14	Punctuation (':')		1		Y		
12	15	X,Y Uncertainty	0	7	1 - 7	Y	Radius from PIDF-LO Circle	
12	23	Punctuation ('C')		1		Y		
12	24	Punctuation ('O')		1		Y		
12	25	Punctuation ('P')		1		Y		
12	26	Punctuation (':')		1		Y		
12	27	X,Y Confidence	3	3	4 - 6	Y	<confidence>	
12	30	Punctuation (\015)		1		Y		
13	1	Punctuation (\015)		1		Y		
14	1	Police	0	31	1 - 31	N	N/A	CPE will insert 31 blanks into this field
14	32	Punctuation (\015)		1		Y		
15	1	Fire	0	31	1 - 31	N	N/A	CPE will insert 31 blanks into this field
15	32	Punctuation (\015)		1		Y		

16	1	EMS	0	31	1 - 31	N	N/A	CPE will insert 31 blanks into this field
16	32	End of Text <ETX>		1	1		N/A	

Note: The above table depicts data format for the modified Format 15 output provided via the serial interface. Time stamp delivered with the CAD spill will include hours and minutes only, not the seconds.