



## Video surveillance network in Hungary

**Information:** A video surveillance network for monitoring was setup for the Transdanubian Regional Waterworks Corporation, which serves more than 700,000 consumers in the six counties of the Transdanubian region. A company IVST Ltd. worked together with a local distributor Accesspoint Kft. A total of 13 sites each equipped with 3 cameras was wirelessly connected using LigoWave and Deliberant equipment.

**Challenges:** Unusual landscape and network topology required a professional backhaul solution capable of delivering high throughput even to the most distant locations with cameras installed from the monitoring center. Low and stable latency was required to ensure smooth high quality video data transmission. High PPS (packet per second rate) was necessary to ensure sufficient capacity for the real time data transmission over the network. A single system for network monitoring and management was required by the customer to allow easy and flexible supervision and troubleshooting of the network.

**Solution:** LigoPTP PRO and UNITY devices selected for the backbone of the network did a perfect job ensuring the minimum required capacity of 130 Mbps without a problem. A wide range of Deliberant devices including an integrated sector antenna APC 5M-90, connectorized (APC 5M) were used as a base-station and APC 5M-12, APC 5M-18 were used as a client devices covering throughput and distance requirements from the customer. The point to multipoint network distances varied from 600 meters to 6 km. Proprietary protocols used for data transmission ensure reliable and even communication and a high packet per second rate, which is important for video surveillance networks. Another advantage is a single system for monitoring, statistical information gathering and management provided by LigoWave. It makes such deployments easy to service and troubleshoot in case there any any failures happening within the network.

"The cooperation with local distributor of LigoWave wireless equipment and the performance of these devices was so great, that we will be using this equipment in all our future projects as well" - IVST Ltd.



### Wireless equipment performance details

	Distance	Signal level	Speed (Mbps)		Device used
			64k	2048k	
<b>Point to point</b>					
From Kozpont to Iroda	0,2 km	-50 / -55	116	186	LigoPTP UNITY
From IZA to Kozpont	1,8 km	-58 / -59	123	160	LigoPTP UNITY
From Nyirad to IZA	3,4 km	-47 / -50	122	149	LigoPTP UNITY
From well 28 to Nyirad	5,3 km	-56 / -57	26	141	LigoPTP PRO
From well 28 to well 22	0,2	-56 / -59	22	89	APC 5M-12
<b>Point to multipoint</b>					
From IZA sector to well 8	1 km	-55 / -60	26	53	APC 5M-18
From IZA sector to well 18	1,7 km	-45 / -50	19	59	APC 5M-18
From IZA sector to well 3	0,5 km	-55 / -60	18	59	APC 5M-12
From Nyirad sector to well 14	3 km	-59 / -60	N/A	N/A	APC 5M-18
From Nyirad sector to well 21	1,7 km	-47 / -55	19	35	APC 5M-18
From Nyirad sector to well 34	1,5 km	-56 / -58	N/A	N/A	APC 5M-18
From Nyirad sector to well 37	1,3 km	-50 / -56	N/A	N/A	APC 5M-18
From Nyirad sector - Ordog	6,1 km	-65 / -65	8	28	APC 5M
From well 28 sector to well 35	0,8 km	-53 / -56	29	134	APC 5M-18
From well 28 sector to well 2	1,1 km	-54 / -55	28	128	APC 5M-18

Average latency on all cameras: 3,5 - 20 ms