



# Intro, security

2019

Baruch Altman [Baruch@liveu.tv](mailto:Baruch@liveu.tv)



# LiveU: Reliable, quality real time video from anywhere



*LU600 HEVC, up to 8 modems*



*LU300 HEVC, 2 integrated modems  
+ optional 2 external modems*



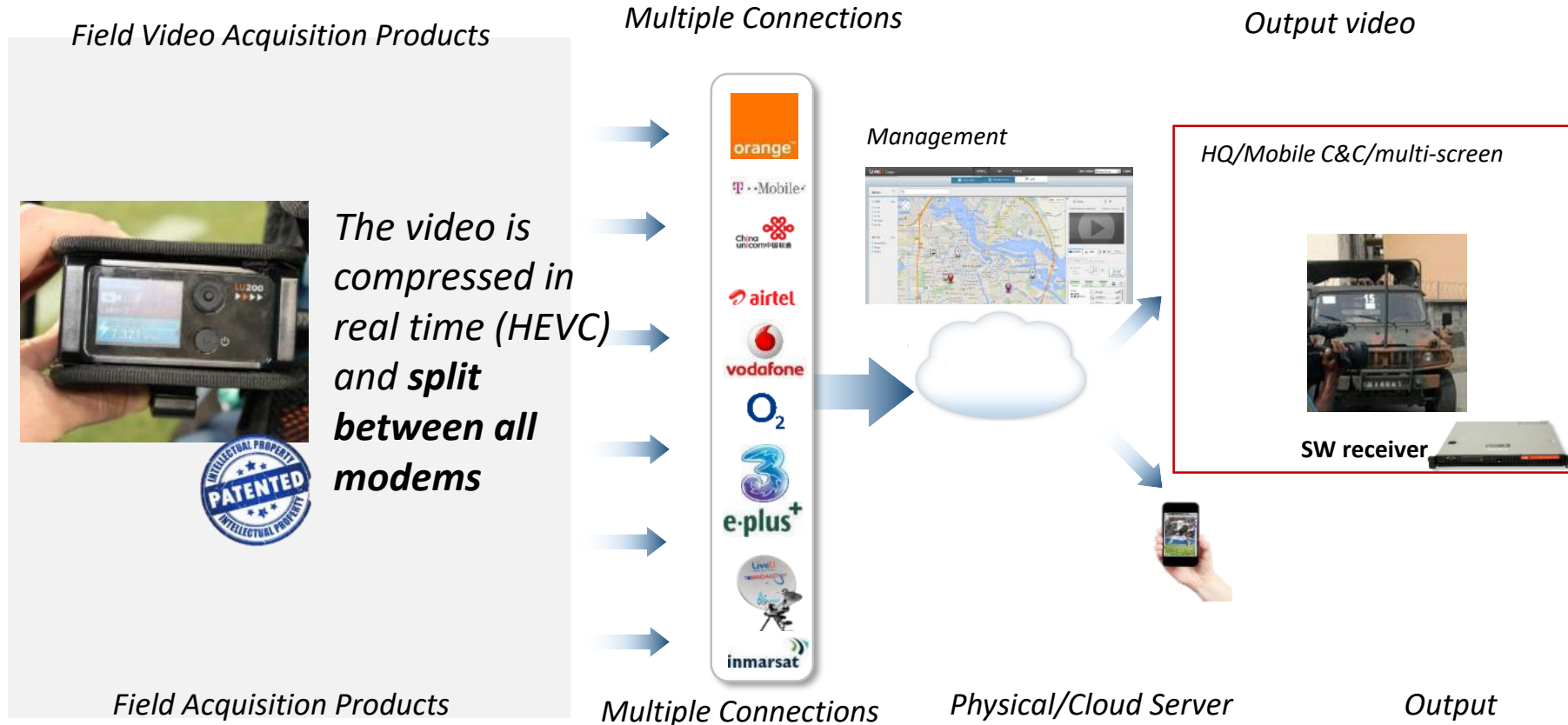
*LU200 H.264, 2 integrated modems  
+ optional 2 external modems*

# 3000+ CUSTOMERS IN 100 COUNTRIES & GROWING



*FROM TRADITIONAL TV STATIONS TO ONLINE MEDIA  
AND USER-GENERATED CONTENT*

# THE LIVEU TECHNOLOGY



- **Split the transmission between multiple** networks & modems (cellular 3G/4G/5G, WiFi, SATCOM)
- Highest reliability, max bandwidth, full mobility, compact, coverage
- **Economics:** Common solution to all countries, any commercial network, future-ready



# Use cases

- First responders
  - Crowd/riot control
  - Mobile surveillance / intelligence gathering
  - Tactical units, Special Ops
  - Traffic control
  - Covert operations, dignitary escort, ...
  - Fire fighting, wildfires
  - HAZMAT
- Civil defense
  - Disaster/emergency management
  - Search & Rescue
- Special services
  - Mobile surveillance
  - Physical security
- Paramilitary & defense
  - Border protection; e.g. vehicles w night/day camera, soldiers equipped with smaller units, transmitting back to HQ
  - Special tactical units/Ops



# Multi-Link Bonding used in Public Safety

*Crowd situational awareness*



 **pete john** @petejohn10 · Mar 19  
Ukrainian soldiers digging trenches in preparation for the next attack from Russian backed forces in Mariupol liveu

← ↻ 3 ☆ ⋮

*Dignitary protection*



*Conflicts situational awareness, civil guards, preparation*

*Natural disasters real time situation awareness, recovery, search and rescue*





# Aerial video using LiveU bonded cellular

*Overhead  
real time  
situational  
awareness*




*Mega events,  
riots, natural  
disasters,  
mobile  
surveillance,  
border  
protection*






# Migrants crisis live coverage examples





**akos\_j (/n/akos\_j)**  
 Ákos Juhász  
 2015-09-17, 8:10  
 Clarendon  
 Gránica (Horgoš) (/location/238041703)

## Hungary borders




**akos\_j (/n/akos\_j)**  
 Ákos Juhász  
 2015-09-05, 12:13  
 Slumber




**akos\_j (/n/akos\_j)**  
 #border  
 (/tag/border)  
 #railway  
 (/tag/railway) #liveu  
 (/tag/liveu) 2mon



Anja Koch, freelancer

## Greece borders

Idomeni



Andy Hill, freelancer



# LiveU Bonding Combined with SATCOM



*BGAN + LiveU, Kilimanjaro*



*LiveU + SOTM*



*SNG motorcycles ☺*



*Fox News Chicago - LiveU & Raysat*



*LiveU during the Boston Marathon LU70 in Switzerland: mobile Kx-SAT connectivity terror attack and search*



---

# Use Case: Border Protection

- Border patrols against smuggling and illegal man-crossings
- Vehicle mounted and soldier-carried
- Part of a full turn-key solution by SI: vehicles, thermal/day camera, LiveU transmission, control room HW & SW





# Use Case: Backhauling from drone control vehicle

- FlyMotion vehicle to control drones
- LiveU multi-link bonding to backhaul the video to anywhere
- Uses multiple cellular network and the vehicle SATCOM as needed
- <https://unmanned-aerial.com/liveu-flymotion-offer-live-video-transmission-in-drone-control-vehicle>
- <https://www.suasnews.com/2015/12/flymotion-trident/>
- <http://www.flymotionus.com/>



- Backhauling from DJI drones
- <https://www.youtube.com/watch?v=0wjvuiRdoCY>



---

# Use Case: Police Surveillance

- **Application:** Situational awareness from the streets and for mega-events
- **Usage:** Man-carried into VMS and distribution to tablets
- **LiveU:** **LU200s** & distribution to tablets
- Part of a solution that includes the camera and integration to existing VMS. LiveU also developed distribution matrix and display on commanders' tablets
- E.g., Tokyo police high quality mobile surveillance for back-office high quality analytics





# Use Case: Rapid deployment & Disaster Management

- Broadband live Video for rapid deployment
  - Disaster real time management & later Recovery, Search & Rescue, Telemedicine
- Intervention
  - Intelligence gathering
- Special features
  - Hybrid: Bonding with Satcom
  - Integrated strong antenna for multiple cellular modems; Xtender product



---

# Use Case: Police Surveillance & riot control

- Situational awareness from crowd-related events and disturbances
- Vehicle and man-carried
- Part of a solution that includes the camera and integration to existing VMS





---

# Live from Smartphones



- Highest video quality transmission
- Bonding cellular+WiFi, or cellular+external cellular via wifi tethering
- On the move

# LiveU Video Clips

- CNN transmitting live from Gaza, LiveU on window ledge

<https://www.youtube.com/watch?v=phornEho0SY>

- Ferguson USA riots: <https://www.youtube.com/watch?v=EfaodQNDzWA>

- UK Birmingham 2011 Riots:

<https://www.youtube.com/watch?v=S4XK6EenXbl>

- Securing Obama visit in Brazil

<https://www.youtube.com/watch?v=o0lkx229k2Q>

- Brazil police / Cocatel

- <https://www.youtube.com/watch?v=Ek03XZjoeNE>
- <https://www.youtube.com/watch?v=LDsk2DPQrls>

1. Silk road race, 2018, vehicle, helicopter, motorcycles

- I. <https://www.youtube.com/watch?v=-wmJJF8pAec>
- II. <https://www.liveu.tv/liveu-news/press-releases/236-2018/liveu-brings-eight-days-live-from-the-2018-silk-way-off-road-rally-in-russia>



1. Under fire, Gaza border
2. <https://www.youtube.com/watch?v=O-3uFGEYZCI>
3. Live under bombardment
4. <https://www.youtube.com/watch?v=vvBLZltF-Hs>
5. Gaza border, live  
<https://www.facebook.com/wallanews/videos/1788337597869097/>
6. Terror attack on the Egypt border
7. <https://www.youtube.com/watch?v=P9lrGlxxjSo>



---

# THANK YOU!

For more information  
[www.liveu.tv](http://www.liveu.tv)