SUCCESSFUL DX-ING ON 10m WITH DATV

IT ACTUALLY STARTED ON 6M DURING A SPORADIC E PROPAGATION.
Through the Italian newsletter “INFO-RADIO & NEWS by I1SCL” from Ovidio Scarpa, I learnt of their existence and came into contact with a number of Italian and Greek ATV enthusiasts.
During the June 2025 IARU ATV contest, whilst there was a sporadic E outburst, I managed to establish a two-way connection on 6m with Sicily in DVB-S2 at SR 125 ks/s quite easily and immediately. This was despite having been told that multipath phase shifts and other distortions caused by refraction in the ionosphere would result in a signal that could not be demodulated into moving video.
However, the obtained result was different, and three days later, during another sporadic-E event, I managed a repeated DATV connection with Rino IT9GNJ without much difficulty, and this was again over a distance of 1733 km.

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DATV ON 10M:

The previous experience on 6m reinforced my idea to try this out sooner or later on 10m as well.

The advantage of 10m is that we are not only dependent on the rare ‘sporadic E’ propagation phenomena. In the meantime my 6m upconverter was already equipped for 10m in terms of local oscillator filtering, with a good low-noise preamplifier and a bandpass filter for 10m.

The frequency 29.4MHz was chosen after carefully monitoring during several months for a sufficient wide and unused gap in the 10 frequency band. Yes there is indeed another frequency being indicated for DATV operation, but there the gap is too narrow and we would certainly have created interferences with other users.

The idea was there, however, it’s not easy to find local contacts to try things out and to do experiments on 10m. On a number of occasions I sent out fruitless calls via email and BATC DX-SPOT on Saturday and Sunday mornings when conditions were good.

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Until a certain Sunday morning, when conditions on 10m seemed reasonably favourable again and both Rino IT9GNJ and Stavros SV1EBS responded to my call.
We decided that before starting any DATV transmissions we should verify each time if at least the radio-signal arrived well and strong enough at the other side. This could be done by means of a simple CW carrier and an SSB receiver.
It didn’t work out with Rino IT9GNJ in Sicily. With his vertical omnidirectional antenna, he couldn’t even detect my CW carrier, perhaps a problem with the polarity, or maybe the distance being a little too short for the 10m skip?
So I sent an email to Stavros SV1EBS, who immediately let me know that he could detect my carrier at S9 with his 10m TRX. I then prepared a DATV signal in DVB-S2 and went on air with a symbol rate of 125 ks/s, after which a shout came back almost immediately: yeeees ….. RX OK.
THE FIRST EVER DATV CONTACT BETWEEN BELGIUM AND GREECE WAS A FACT.

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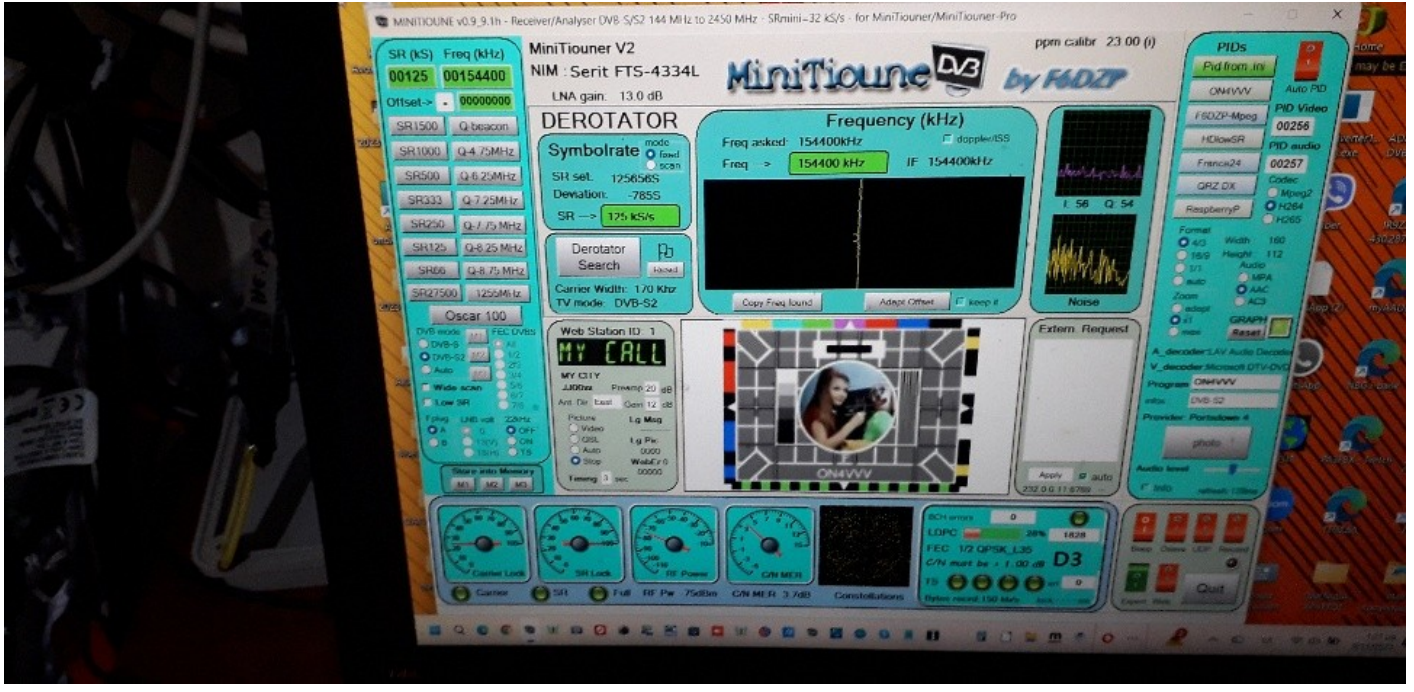
The signal strength varied between D1 and D4 for almost 30 minutes, so I also gave it a go with 250 ks/s and even that worked briefly.
Below is my test picture received by Stavros SV1EBS.



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Okay, very nice, but maybe this was just a rare “lucky moment,” so I agree with Stavros that, provided conditions are good on 10m, we’ll try again next Sunday morning.
And sure enough, this time he sees my carrier even with S9+10dB on his SSB RX, though it takes a few minutes before his mini-tuner can lock onto my 125 ks/s DVB-S2 signal and produce the picture. My signal strength remains stable between D3 and D7.

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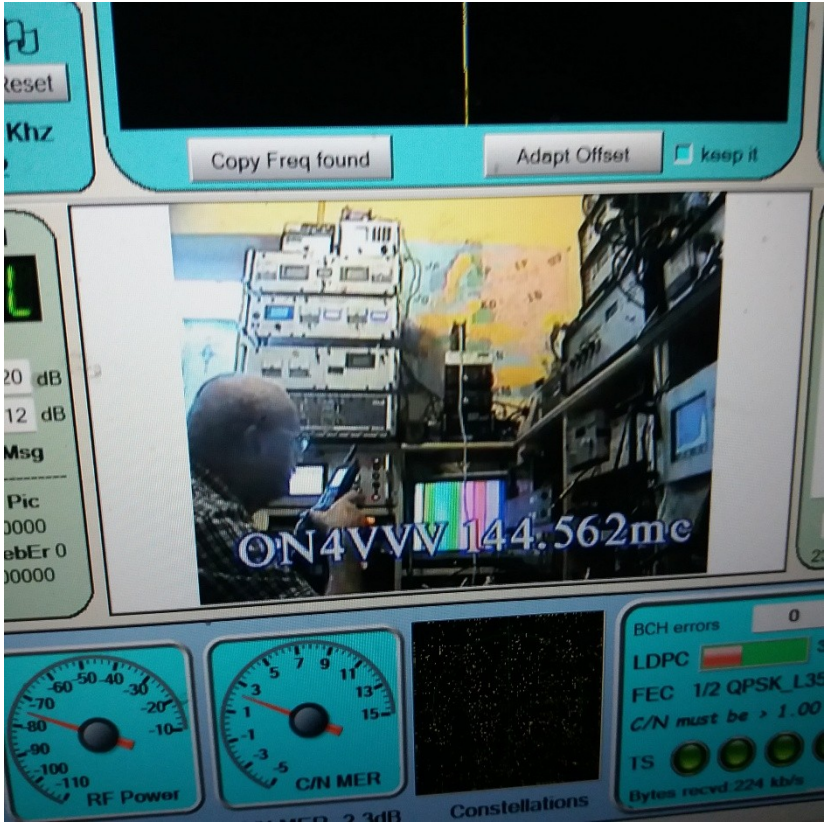
Due to the sufficient strong signal we decide to switch to an SR of 250ks/s with the video from my camera.
A D6 means that there is about 6dB headroom and updating to an SR of 250 ks/s means only a decrease of signal strength with 3dB, so this should be possible.
It takes a little longer because camera video contains significantly more data, but it worked like a charm, as you can see below.



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Here, too, the connection remains stable for tens of minutes with smooth moving images. Stavros even made a very nice YouTube video of it, which you can watch here: https://www.youtube.com/watch?v=YwJAnb-s0YY
Miraculously, the story from his side comes later, namely his reception conditions: a simple dipole, without a bandpass filter and without a preamplifier.
We decide to continue testing when we will happen both to have free time at the same moment in the coming weeks, with maybe also an attempt in the other direction from Greece to Belgium and preferably with improved RX conditions on Stavros's end.
After two successful attempts in November, I managed to connect with Stavros SV1EBS again in early December.

This means three successful attempts out of five, which isn't bad at all. We followed the agreed standard procedure again.
First, since Stavros doesn't have a spectrum analyser or SDR ANGEL, we checked whether a CW carrier could be detected strong enough on a regular SSB receiver. Once this was confirmed, we started with a symbol rate of 33 ks/s, followed by 66, 125, and 250 ks/s. Each of these transmissions resulted in received images, and that with a simple wire dipole without a preamplifier or bandpass filter on the receiving end.

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You can see it in the following YouTube video made by Stavros himself:
www.youtube.com/watch?v=0RsGRJWGPog&t=109s
I should add that when making the arrangements, in advance the real-time conditions for 10m were evaluated each time at: https://hf.dxview.org/perspective/JO10wx
Our successful operations on 10m were also featured on John Desmond EI7GL's "blog": https://ei7gl.blogspot.com/2025/11/digital-amateur-tv-experiment-between.html which brought them to the attention of a Russian amateur radio listener a few hundred kilometres beyond the Crimea. Since he wasn't home on Saturday or Sunday mornings, he decided to record the entire spectrum around 29 MHz and then, during his free time, attempt to demodulate the recorded material using SDR CONSOLE and SDR TELEVISION. And yes, that all worked out too. The direction from me to this OM differs by as much as 30 degrees, but my 4-element Yagi has a total horizontal beamwidth of 60 degrees at -3dB. You can see the result of his efforts here, at QRA locator KN95BG, a distance of 2594 km.

The Russian, in turn, posted replies on the blog and a YouTube video on the Russian YouTube site: https://rutube.ru/video/private/02c17478e0d3bde7127eb843829fdbab/?p=LRxhTDEASKOmdNtk6mQLjg

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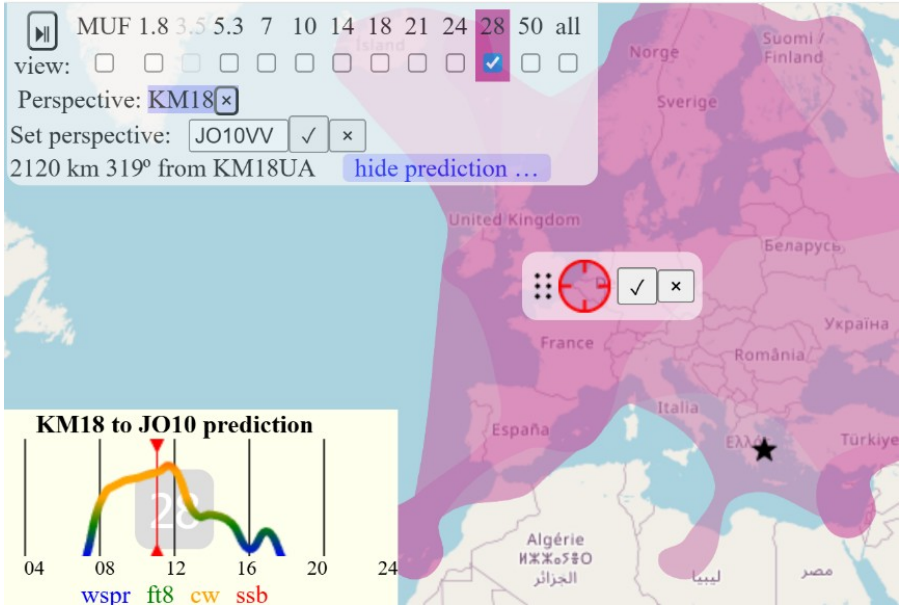
Following the successful attempts in November and early December of last year, during which we transmitted smooth, moving video footage over a distance of 2,124 km, I have been monitoring the 10m propagation every Saturday and Sunday morning for the past few weeks. This was done via this site, where you can view both the current propagation and the forecast: https://hf.dxview.org/perspective/KM17UX When the destination area showed ok for SSB communication I have always checked the forecast too, in order looking at the graph, to discover the best peek hours for the test in red colour.



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The forecast for Saturday morning, March 7, wasn't bad, but it wasn't exactly ideal either.
Although the conditions were much better for longer distances of over 3,000 km, we went ahead and made an attempt anyway with Yiannis SC1COA this time in direction Greece-Belgium.

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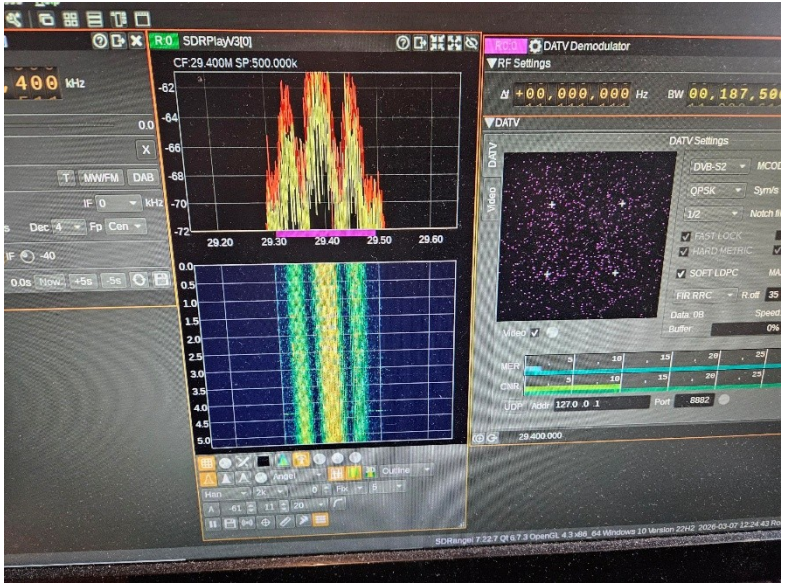
As you can see in the spectrum image on SDR-ANGEL below, the received spectrum was initially heavily distorted by multipath or by the refraction on the ionosphere layers, but the signal strength was well over 10 dB above the noise floor. The situation was constantly changing, and before I knew it, I had a picture from Yiannis SC1COA.
Due to that severe multipath distortion, we decided to stick to 66 kbps for this session.



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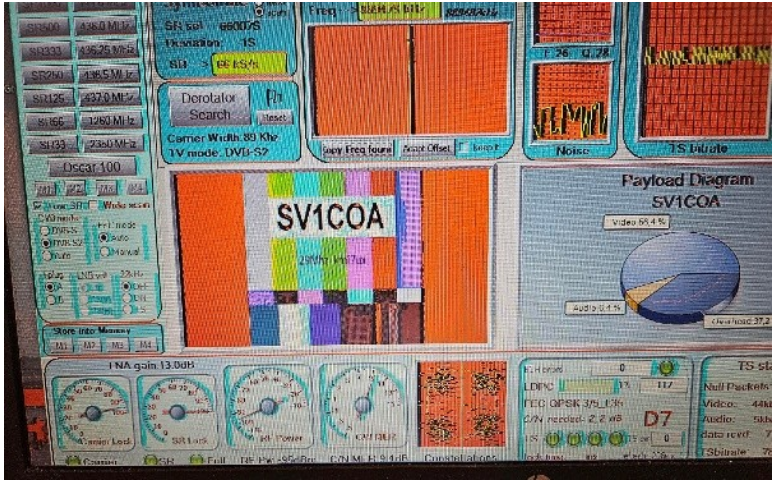
Note that SV1COA's transmit power on 10m, using a dipole antenna 6m above the ground, was only 20 watts, powered by a discarded and modified CB amplifier. This proves that, as I have claimed before, long-distance DX contacts with DATV are by no means impossible, and in fact, not even that difficult.

Below is a picture of SV1COA's transmitting antenna:

And a fantastic result: the first DATV connection from Greece to Belgium.



The above was done using the MiniTiouner showing a signal strength of D7.

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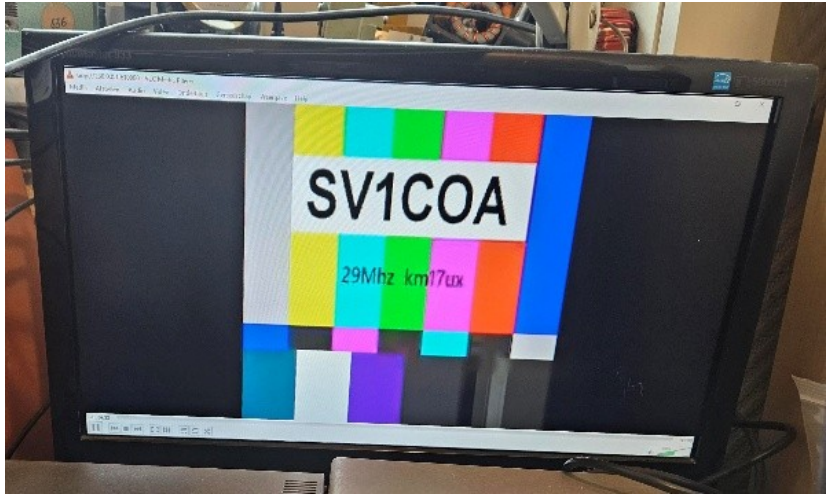
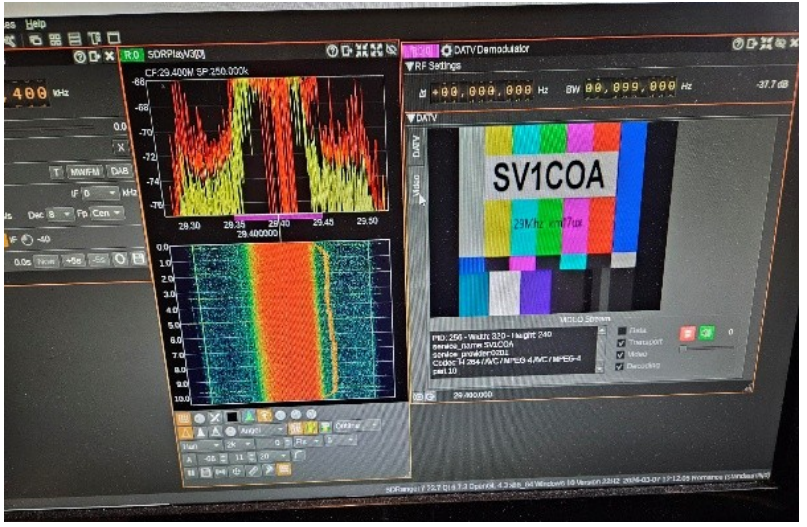
As you may see, my old laptop sometimes loses one colour due to some bad contact inside, but it still looks great.





Via MT and VLC

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And RX was just as smooth with SDR-ANGEL combined with an SDR-PLAY.
The above experiments and achievements show that it is not that difficult to do digital television with smooth moving video on the 10m band based on average to good HF conditions.
Due to the ease of all these contacts on 10m I am convinced that much further successful DATV contacts can be made too. But therefore I have to find and make skeds with OM’s that are equipped with 6 or 10m horizontal antennas and know how to operate their equipment in DVB-S or DVB-S2 in different Symbol Rates.
My working conditions: homemade PA 200W of D-ATV power in a HAM INTERNATIONAL 4 element yagi on 10m and a 6 element for 6m.

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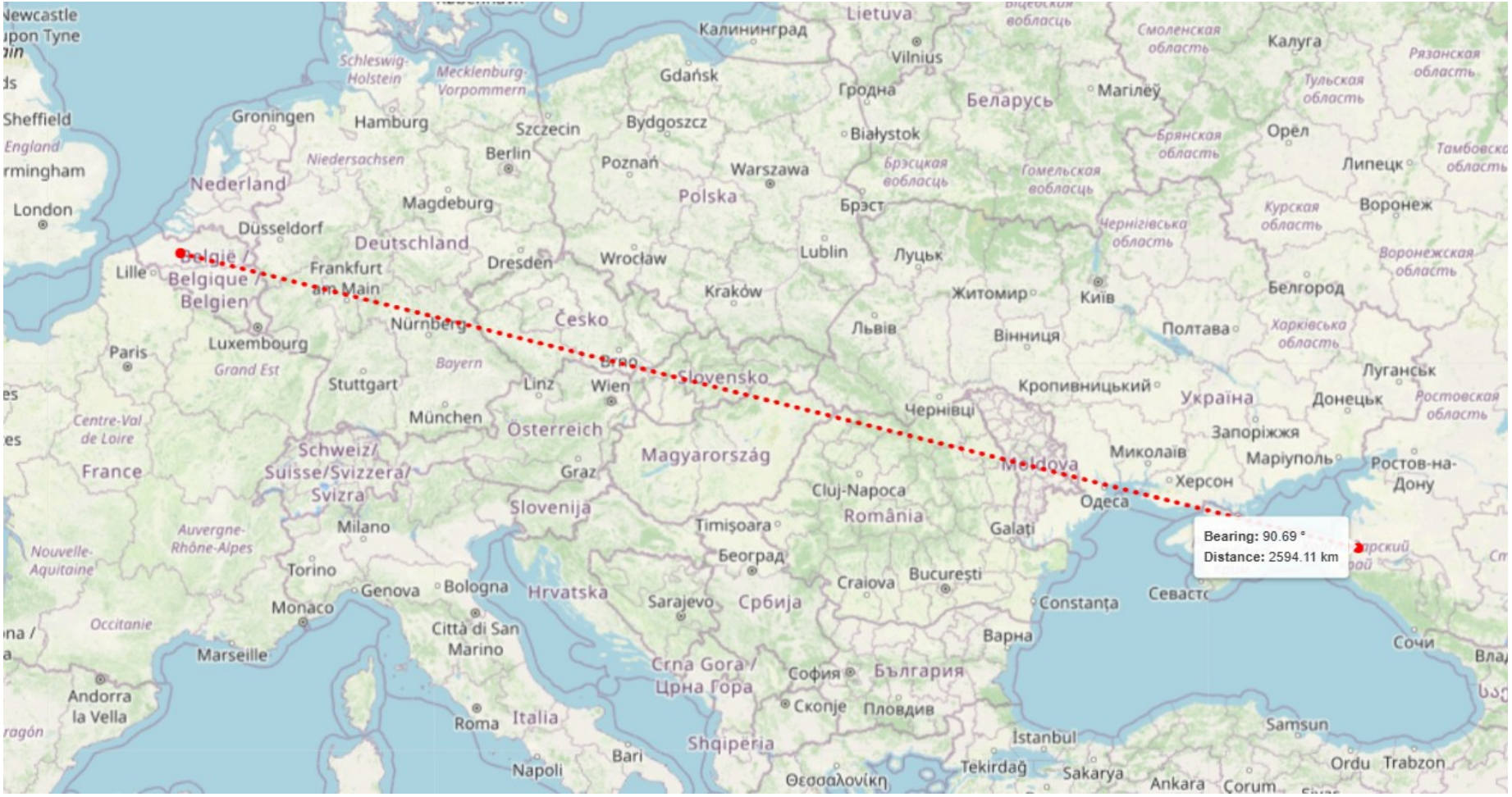

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INTERESTED ??

Please contact me if you want to do some dx or local experiments on 10 of 6m
ON4VVV@UBA.BE or call me on the Zello channel: ATV België
Also the DX-SPOT of the BATC can be very useful but it can take some time before I see your message.