Hamnet 2.0 is a radio based network designed by German radio amateurs, which connects the already available infrastructure of the amateur radio service to each other and will provide a new powerful base for a amateur internet wireless network.

http://www.amateurfunk.de/

In particular, packet radio Digipeater, voice mailboxes, FM relays, ATV-converter, D-STAR Relay and Funkrufsender be present in the sample and construction phase mainly involved in the area of Lower Saxony. The official launch of the project and the presentation was made on the amateur radio exhibition and conference on October 31 2009 Radio Inter in Hanover, accompanied by relevant lectures. In another phase of club and school stations will be integrated into the network and then possibly also to allow user access.

Hamnet 2.0 works on the basis of the TCP / IP protocol, so that commercially available wireless routers can be used with no or minor modifications as the hardware. In addition, a separate hardware and firmware for this application was developed, for example, it is also possible to form in the packet radio network involving widespread RMNC digipeater. The transmission rates are currently estimated at 1 to 17 Mbps. As the frequency range is currently the 6-centimeter-band or the ISM range used at 5.7 GHz.

New in DL - HamNet 2.0

The following is presentation by Andreas, DG0OAE at Interradio on October 31 2009 and the local Presentation of the new equipment of NordLink e.V. see http://www.nordlink.org as the starting point for the new broadband network HamNet 2.0 at 5 GHz in DL.

(http://www.mydarc.de/dg0cc/HamNet2.0_e.htm) Will use WLAN module NanoStation5 by Ubiquiti. See Datasheet: http://www.ubnt.com/downloads/ns5_datasheet.pdf

HamNET 2.0

Broadband Networking in Amateur Radio

Introduction

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The Situation

- Sharply declining use of infrastructure
- Displacement by the Internet
- Obsolete, slow, failure-prone equipment in use
- Many different uses together
- Increased role of sites
- Islanding
- Dependence on public networks

The Idea and the Hope

- At least, nationwide network
- Cross services (voice, images, data, video etc.)
- TCP / IP as the base
- By enabling broadband multimedia connections
- Locations receive and incorporate appropriate
- Use of affordable a Technology
- Independence from public networks to regain
- Objective: Enhance the number of users and usage
- Arouse interest in experimenting with the new technology
- Development of new applications to launch

The Technology - Requirements

- Standard WLAN technology
- Cost devices with integrated antennas for typical link distances
- Net speed of at least 1Mbit/s, better> 6Mbit /s
- External antennas for DX-lines
- Use on Amateur Radio frequencies, or as general
- Open the software for additional developments
- Limited openness in the hardware
- Versatile use and easy to
- Low power consumption (DFMG) - this typical 3W/ Module

The Technology - Our Choice

- Models of Ubiquiti (www.ubnt.com)
- Wide range for different applications
- Internal or external antennas
- Frequencies of 5-6GHz possible
- Adjustable bandwidth 5-40MHz
- Complete package with power supply and PoE Injectors
- No coaxial cable required
- Outdoors, hardware
- Net speeds up to 75Mbit / s possible
- PtP and PtMP capability
- For 2 Phase suitable for user accounts
- Price by modules under 100, - Euro!

The Beginning - Not So Hard

-Distance about 10km
-Connection from Hanover Laatzen DB0SHA-DB0UHI
-Held in the air -> 16Mbit / s
-Installation time approximately 10 minutes per side
-Stable link between the sites

The Expansion - Faster Than Thought

- Initially, temporary construction of additional lines in the range up to 15km
- Disconnection of the first Internet Tunnel
- Stable fast left tracks in the region of Hanover
- Connection of D-Star Relay
- Linking of EchoLink Gateways
- Integration first club stations e.g. for Fernsteuerzwecke
- How far are indeed possible?

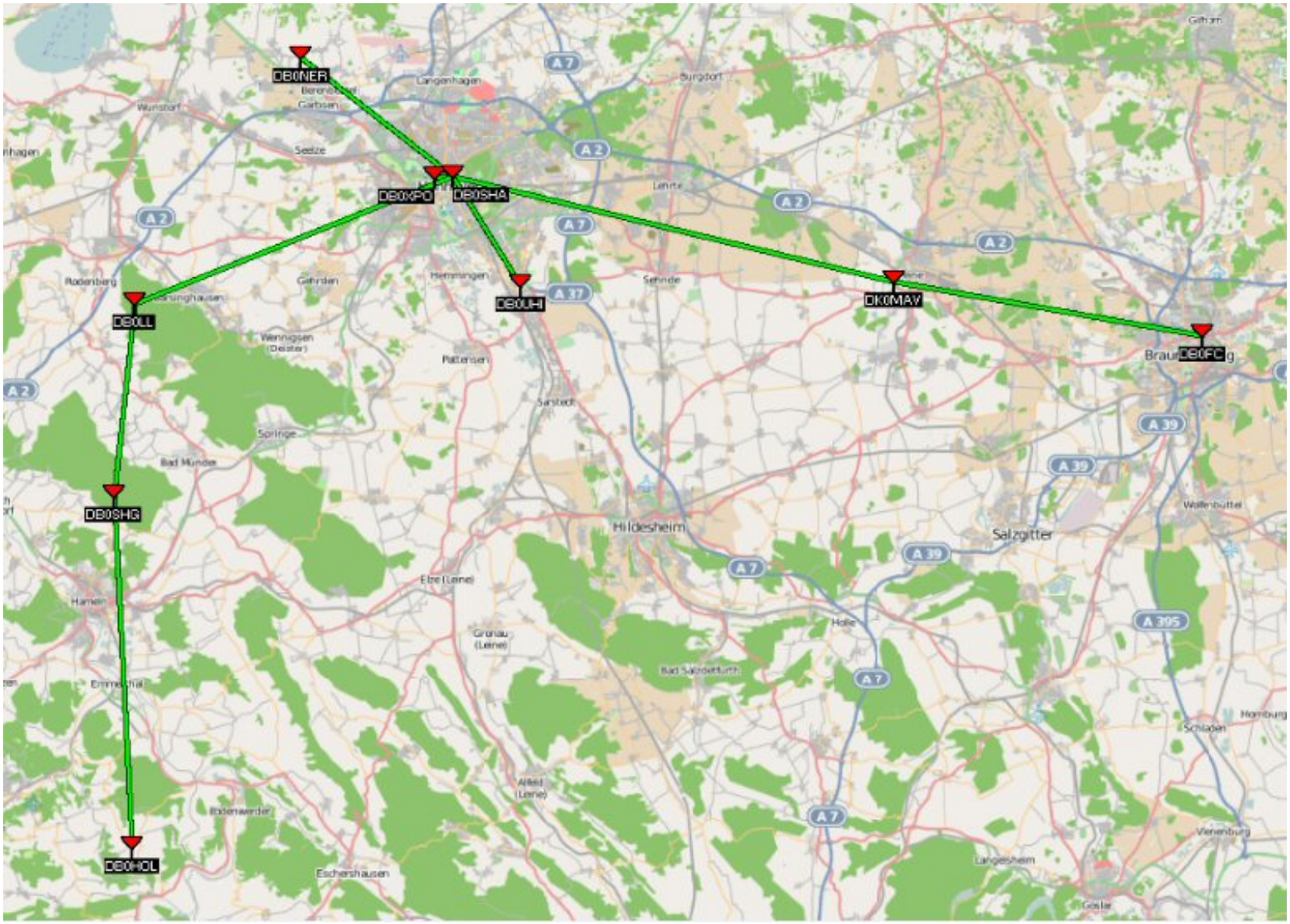
DX? - About The City Limits

- Initial trials with about 32km to the bare module
- Immediate success of Hanover to Peine
- Shutdown of the 23cm-links 19k2
- Stable link between DB0SHA and DK0MAV with about 1Mbit / s
- Speed increase at any time by change in antenna - Antennas for 5GHz are simple and small
- LOS calculations are on a realistic link lengths of more than 100km
- Momentary record with this company is 304km - set up by Italian amateur radio operators (connection of Sardinia to the mainland)

DX? - Locations exposed?

First temporary installations on tower locations
First use of external antennas
Signal strengths can speeds> 50Mbit / s

So Here We Are



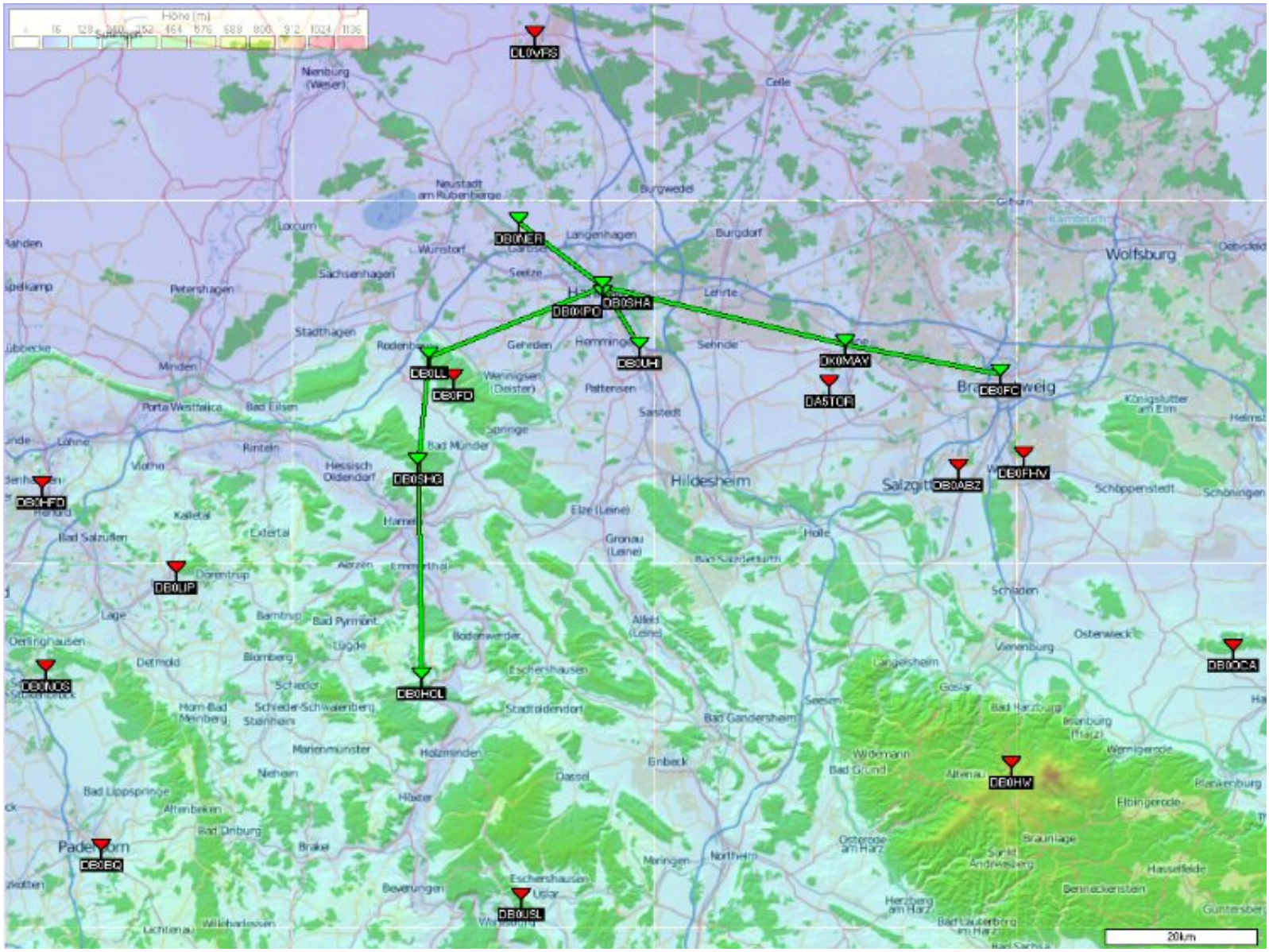
So Here We Are - At DB0SHA

DB0SHA - A star point in Hanover

- 8 pieces NanoStation (M) 5
- 16-Port Switch
- Power supply 12V / 2.4 A
- Distance from 32km
- Data rate between 1 and 50Mbit / s
- No shortage of frequencies, such as at 2.4 GHz

So here we are - at DB0SHA

What happens next?



Questions?

Have any questions?

End

Thank you very much!