

# HAMNET Workshop

Highspeed Amateur Multimedia NETwork

Youngsters On The Air





# brief introduction

#### HAMNET







# Definition

- HAMNET is a closed data network for radio amateurs using very quick WiFi components on directional radio
  - □ It is based on TCP/IP protocol
    - (Transmission Control Protocol / Internet Protocol)
  - □ und UDP (User Datagram Protocol) and many more (DHCP, ARP,...)
- HAMNET has
  - □ A free network structure
  - □ A free choose of protocols
  - Autonomy address structure
  - Connections without firewall and port filters
  - □ Content will not superimposed with comercial issues like (Popup, Spam)
  - □ Very quick connections without using expensive I-NET connections
  - Usage of sites independent of I-Net structures (very usefull to Repeater sites on hill tops)







# **Benefits**

- HAMNET combines RF-technology and IT-technology
- HAMNET is a godd extention to existing data structures
  - Quick connections for existing Packet-Radio-Sites via HAMNET links
  - Extending ILINK structures without I-NET
  - Quick connections to mailbox forwarding systems (WinLink)
- HAMNET adds new posibilities to our communication hobby and promote teamwork on our projects
- HAMNET is not a replacement for Internet





# Equipment





# **Basic Installation**

- Panel antenna
- Mikrotik Groove router RX/TX unit
- 8-pole ETH cables UTP-5/6 with RJ45 connectors

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- PoE power supply 12V – 24V 0.8A
- PC or LAPTOP





# **HAMNET** links





### Groove

- Unboxing Mikrotik Groove
- Unboxing panel antenna
- Connecting the PoE power adapter
- Connection to the LAPTOP
- Download WinBox
- Configuration of an HAMNET access point (AP)
  - Setup the service interface with LAN-IP
  - Setup bridges & routes
  - Setup WAN interface
    - 5785 MHz
    - 20 MHz bandwith
  - Setup DHCP Server for WAN-IP







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Youngsters On The Air	











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DHCP Setup
Setup has completed successfully
OK



© ÖVSV 30



🛇 admin@194.96.22.121 (OE1KBC) - WinBox v6.34.3 on RB Groove A-52HPn (mipsbe)					
Session Settings Dashboard					
Safe Mode Session:	➤ Safe Mode Session: 194.96.22.121				
🔏 Quick Set					
CAPsMAN					
🛲 Interfaces					
🚊 Wireless					
Bridge Route List	Route <0.0.0.0/0>				
PPP Routes	General Attributes				
🛫 Switch 📫 💻					
°t¦o Mesh	Dst. Address: 44.0.0.0/8		Cancel		
≝ IP ト AS	Gateway: serviceBridge ₹	reachable	Apply		
MPLS  DAC	Check Gateway:				
🔀 Routing 🗈	Type: unicast		Comment		
🎲 System 🗅					
Sueues 👳 Queues	Distance: 1		▲ Copy		
Files	Scope: 30		Remove		
Log	Target Scope: 10				
🥵 Radius	Parting Made				
🗙 🔀 Tools 🗈			`		
🞽 🔳 New Terminal 🗼	Pref. Source:		<b>~</b>		
MetaROUTER 3 items (1					
S Partition					
Q 🛄 Make Supout.rif					
🔮 💜 Manual	enabled	active	static		
👌 🔘 New WinBox		1			





# **Testing HAMNET AP**

- Now we can try to activate WLAN on our Smartphone or Tablet
- Search for your SSID e.g. "HAMNET-OE1KBC"
- Connect without password
- Ejoy the connection via your newly created HAMNET AP





# **Mumble-Server**

- Installation and configuration
  - Power your RASPI
  - □ Start PUTTY and LOGIN pi/raspberry
  - sudo apt-get install mumble-server
  - sudo dpkg-reconfigure mumble-server
    - Select <Yes> to start mumble-server on boot
    - Select <Yes> to allow higher priority
    - Type in your SuperUser password
  - sudo nano /etc/mumble-server.ini
    - welcometext=,,Welcome to Mumble-Server OE1KBC"
    - users=5
    - registerName=HAMNET
  - sudo /etc/init.d/mumble-server restart







# **Mumble-Server**

- Now we can reach the new mumble-server via HAMNET
- Download a mumble client for PC/IPhone/Android
- Add a new Server in your client software
- Use RASPIs HAMNET-Address
- Username like callsign\_firstname to better identify yourself









# have fun with HAMNET! AUSTRIA Youngstats or The Air Youngsters On The Air