

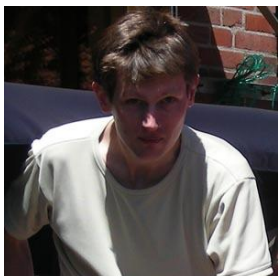


COCHANNELING / DIVERSITY PROJECT VOOR NOORD- EN OOST NEDERLAND

PI2NON

430.275 MHz + 1.6 MHz

Dennis, PA4DEN



Erik, PE1HUE



en heel veel mede radioamateurs

PE1RIH	PA3GAZ	PE1FWD	PD3MWB	PA3ELN
PA2HOS	PA1MOU	PA0CQ	PD0RLL	PA0EBC
PD0YVH	PA3BUE	PA7SB	PA3EUE	PE0BV
PE5JW	PE1OTA	PA0KNW	PA0KHZ	PE9GG
PE1NAO	PD0JP	PC7A	PD0ROZ	PD0HF
PD0ROZ	PA0SPP	PA4TJ	PA4DEN	PI5SGM
PA7LV	PA3CEG	PA3FEX	PA1HUE	PA3BAD
PA0ESH	PI2MEP	PE2HTB	PD0DHN	PA0HLT
PB0ALE	PA1HPM	PE1CYM	PA3BIC	PC1CP
PA10075	PE1CYM	PE1SCX	PA1FYB	PA5RR
PD2MWO	PA0DFN	PC2KY	PE1RJF	PA0I
PD0DPS	PA0VYL	PA2SV	PA2SV	PA5RJ
PA3EKN	ON6ZG	PA3GJB	PA3FZW	PA0HFT
Meewerkende repeatergroepen:				
Apeldoorn	Delfzijl	Heerenveen	Meppel	Vroomshoop
Assen	Groningen	Kampen	Twente	Waddengrp.

Agentschap Telecom
Ministerie van Economische Zaken



De tijdlijn van PI2NON



Repeater Controller
PI2ASN, PI2HVN, PI3ZOD

1987
1997

2006
2008

2008

2009

11 januari
2011

begin
2012

8 maart
2012

1 juni
2013

2014

2015

2016

**Ohio
Scientific
Inc.**

C1P / 6502



hackers
learn share program
respect achievement
question authority
make the world
a better place

NOW
HAM RADIO

Michael Ossmann ADØNR

Great Scott Gadgets



58:29 / 1:41:08





WITZENDINGGEMIST.NL



QSO gemist



beluister alsnog wat je niet hebt meegekregen

PI2NON

Coversity Noord- en oost Nederland

<http://www.coversity.nl/>

PI2NOS

Nationale 70cm repeater

<http://www.hobbyscoop.nl/>

PI3UTR

Bovenregionale repeater IJsselstein

<http://www.pi3utr.nl/>

PI6TEN

10m repeater Hilversum

<http://www.pi6ten.com/>

zoek naar interessante gesprekken

Repeater	Jaar	Mnd	Dag	Uur	Min	
PI2NON ▼	2015 ▼	11 ▼	17 ▼	13 ▼	00 ▼	Speel af



deze service wordt mogelijk gemaakt door pc7x en een klein beetje door pa3ang (341)



PI2NOS

National 70cm repeater Netherlands

<http://www.hobbyscoop.nl/>

output freq.	430.125 MHz
input freq.	431.725 MHz
ctcss input	88.5 Hz
ctcss output	disabled
echolink node	430125

tx IJsselstein	349 meter ASL
tx Goes	135 meter ASL
tx Smilde	302 meter ASL

timeline control: X

play / advance	spacebar
pause / resume	P
stop / begin → end ←	Q
center	C
next	Z
prior	X
next block	A
prior block	S
set startpos	1
set endpos	2
open audio url	3



De tijdlijn van PI2NON



Repeater Controller
PI2ASN, PI2HVN, PI3ZOD



Idee geboren maar nog geen
uitvoering. Enthousiamse
nodig van toekomstige
gebruikers

1987
1997

2006
2008

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11 januari
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begin
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8 maart
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1 juni
2013

2014

2015

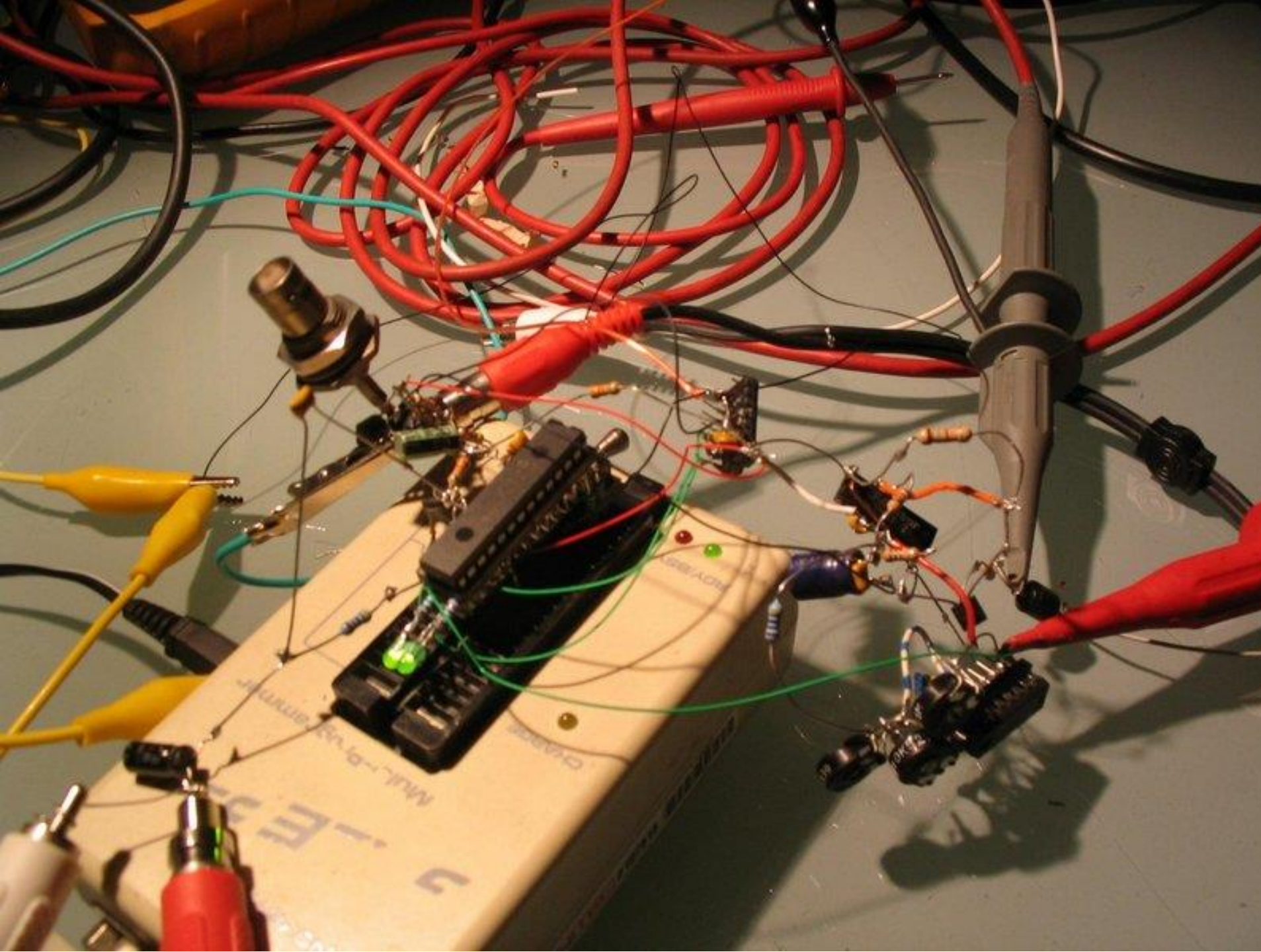
2016

Tijd
GPS ontvangers
analoog relais systeem
Hardware
Internet
Nait an begun'n
12.000 Km²
meerdere tx en rx op één frequentie
Verzekering
Centrale Server
Realisatie
Coaxkabels
Locaties
Filters
Covercity
Vergunningen
Software
€ € € €
Verenigingen
Antennes
Agentschap Telecom
enorm bereik



De tijdlijn van PI2NON





Adaptive Differential Pulse Code Modulation

**PIC Controller
(16F876)**

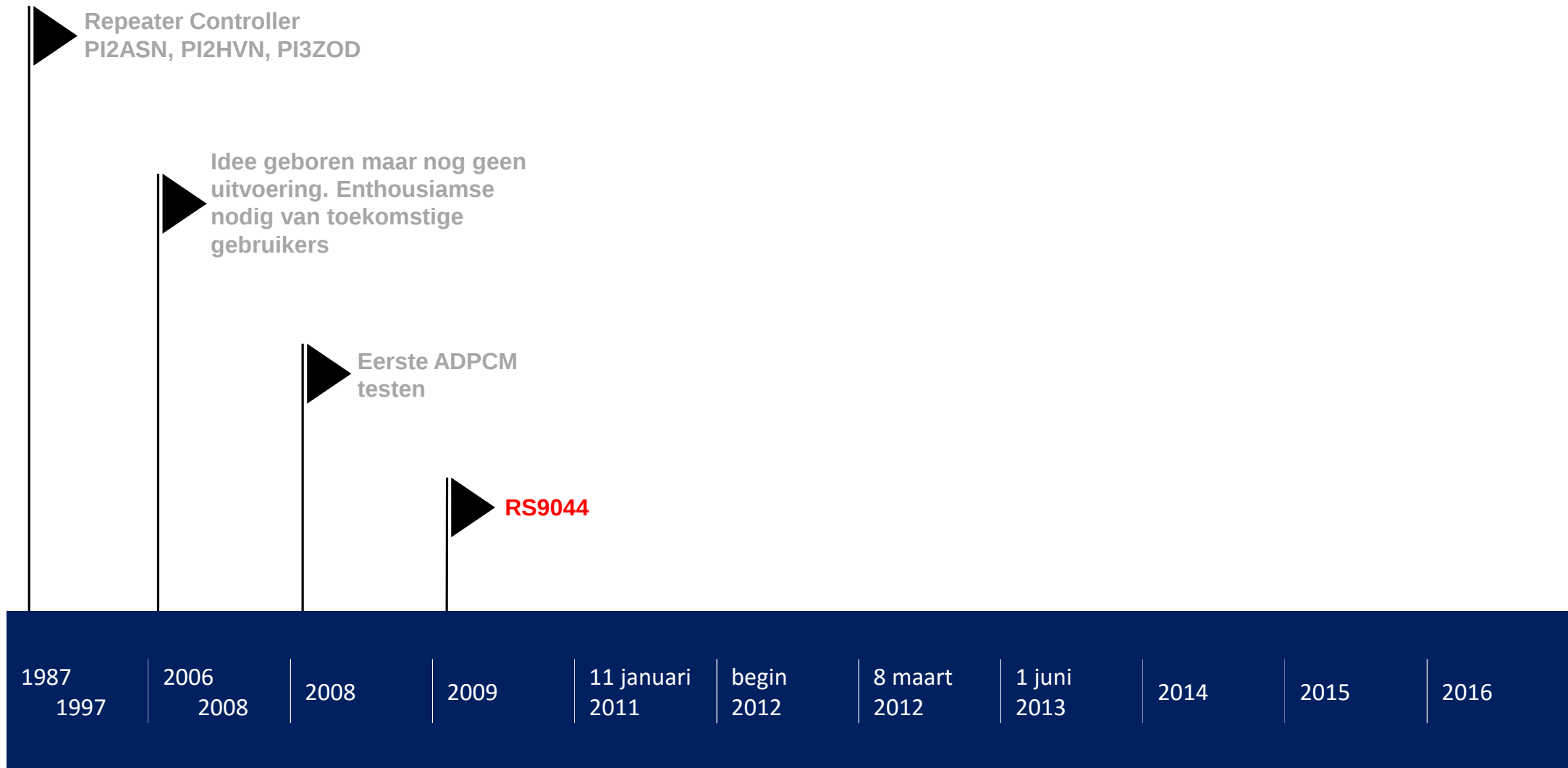
GPS Rx

PLL <> VCO

Audio I/O

SQ & PTT

De tijdlijn van PI2NON





PSU 220V AC/24V DC

RS910

RADIOSYSTEM
SWEDEN AB

F1
4A

F2
4A

OFF

ON



220V. HANG ON ALL
INSIDE COMPONENTS USE
INSULATED INSTRUMENTS

RADIOSYSTEM SWEDEN AB

POSITION
LEFT / RIGHT

CH1/2

CH3/4

CH5/6

CH7/8

CH9/10

CH11/12

CH13/14

CH15/16

CH17/18

CH19/20

CH21/22

CH23/24

CH25/26

CH27/28

CH29/30

CH31/32

CH33/34

CH35/36

CH37/38

CH39/40

CH41/42

CH43/44

CH45/46

CH47/48

CH49/50

CH51/52

CH53/54

CH55/56

CH57/58

CH59/60

CH61/62

CH63/64

CH65/66

CH67/68

CH69/70

CH71/72

CH73/74

CH75/76

CH77/78

CH79/80

CH81/82

CH83/84

CH85/86

CH87/88

CH89/90

CH91/92

CH93/94

CH95/96

CH97/98

CH99/100

24V

24V 1A

⊥

CHANNEL UNIT RS 9044
RADIOSYSTEM SWEDEN AB

431.875.000

MMT HOUSE DSP
BLOCK EXT POUT

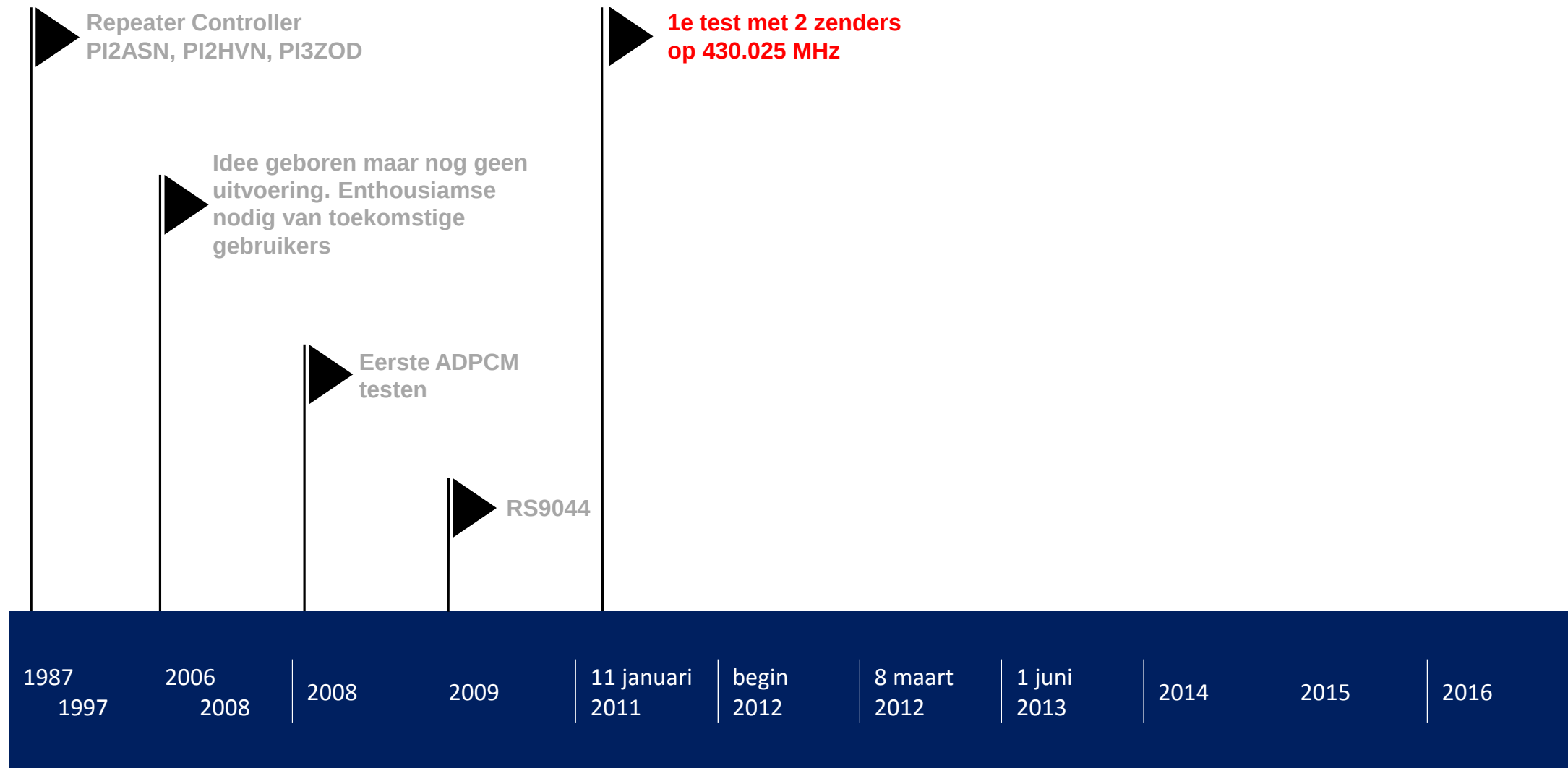
ON RX SR
CU TX XO

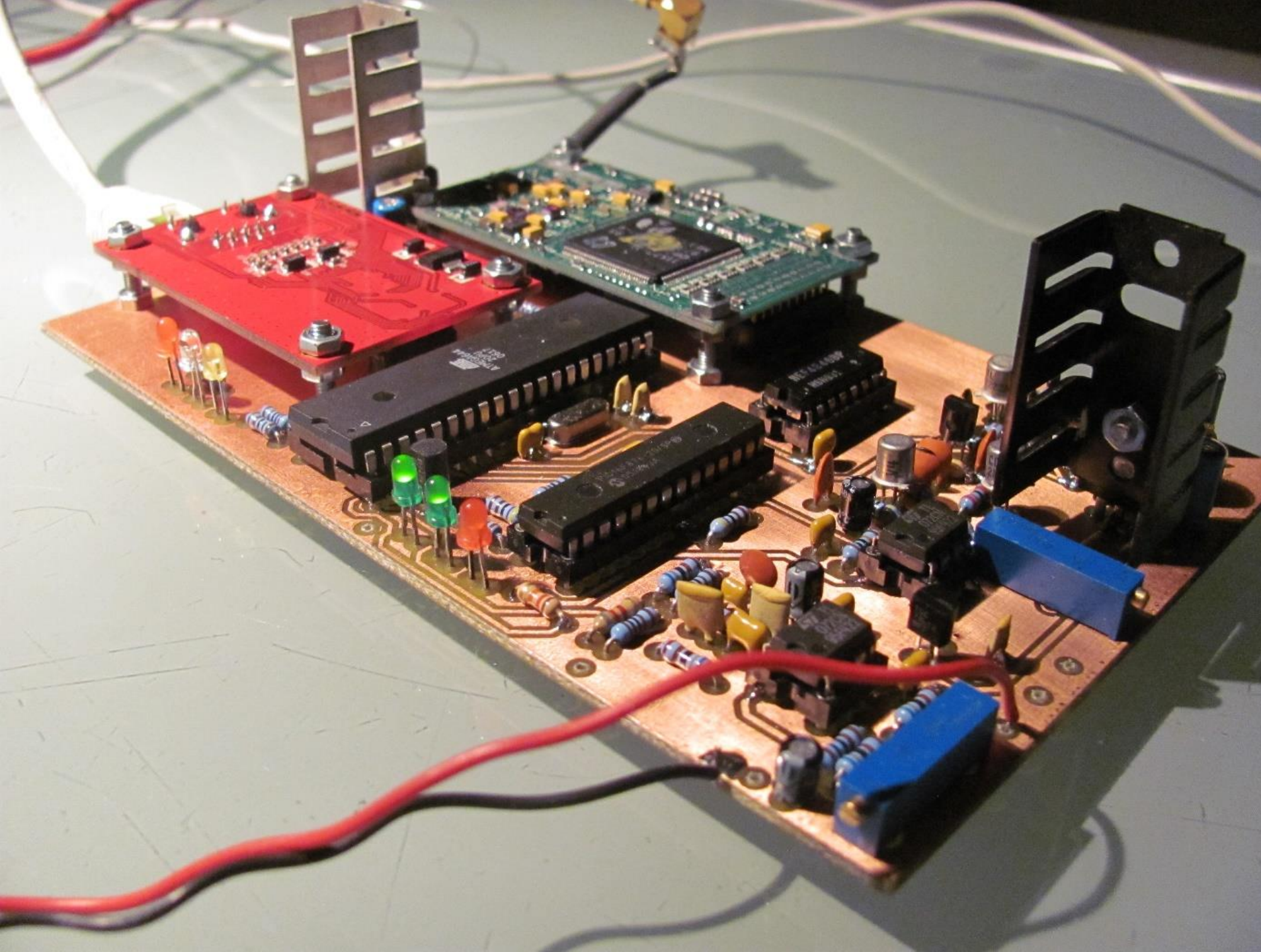
TX SQ RFTL L.BLOCK
1 2 3
4 5 6
7 8 9
0
S.TEST COMP LIGHT
ALARM Div LL CH
ALPES -TP +TP ENTER

TX OUT TX TP

50W

De tijdlijn van PI2NON





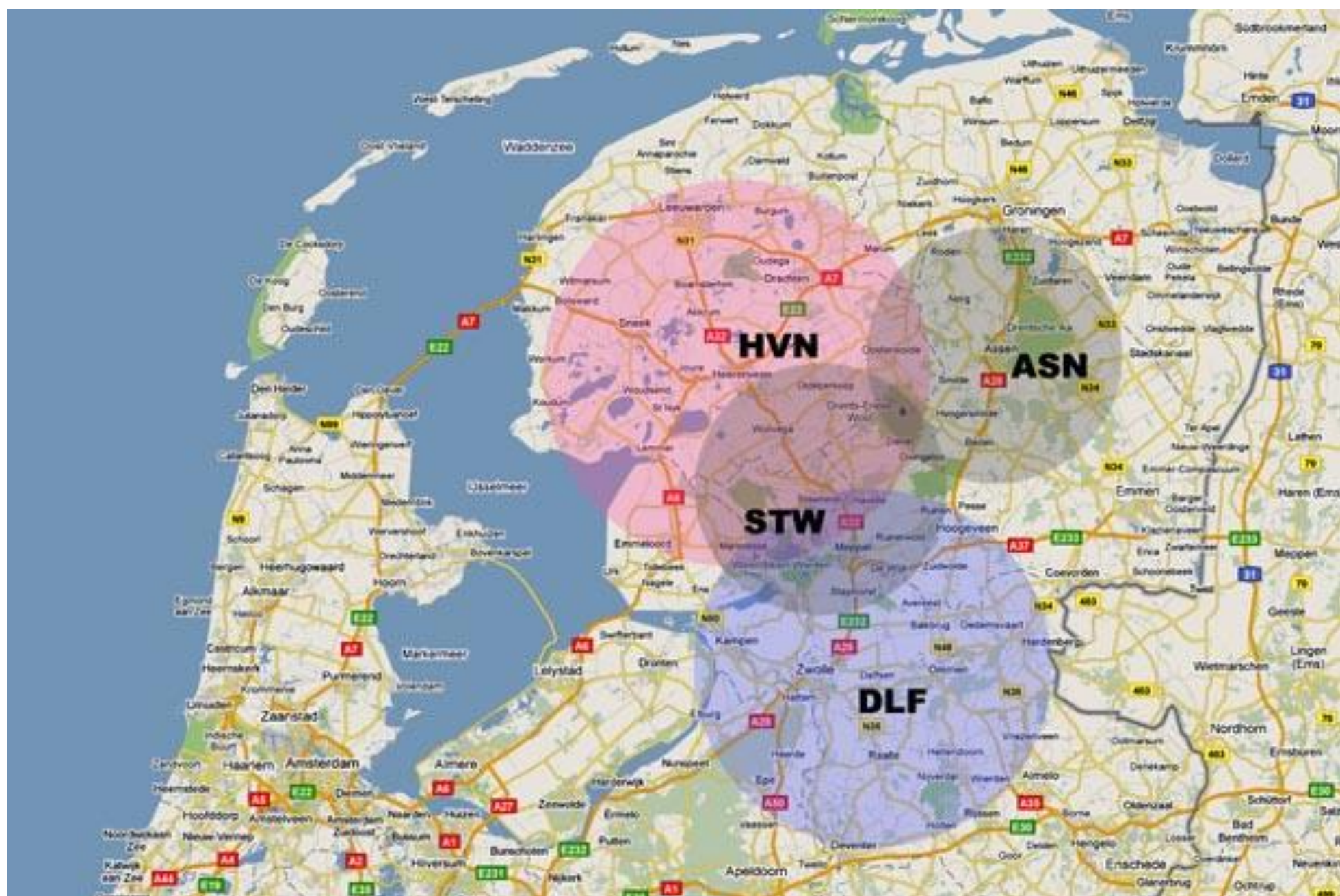
LAN module
(internet)

ADMEGA 644
(comms)

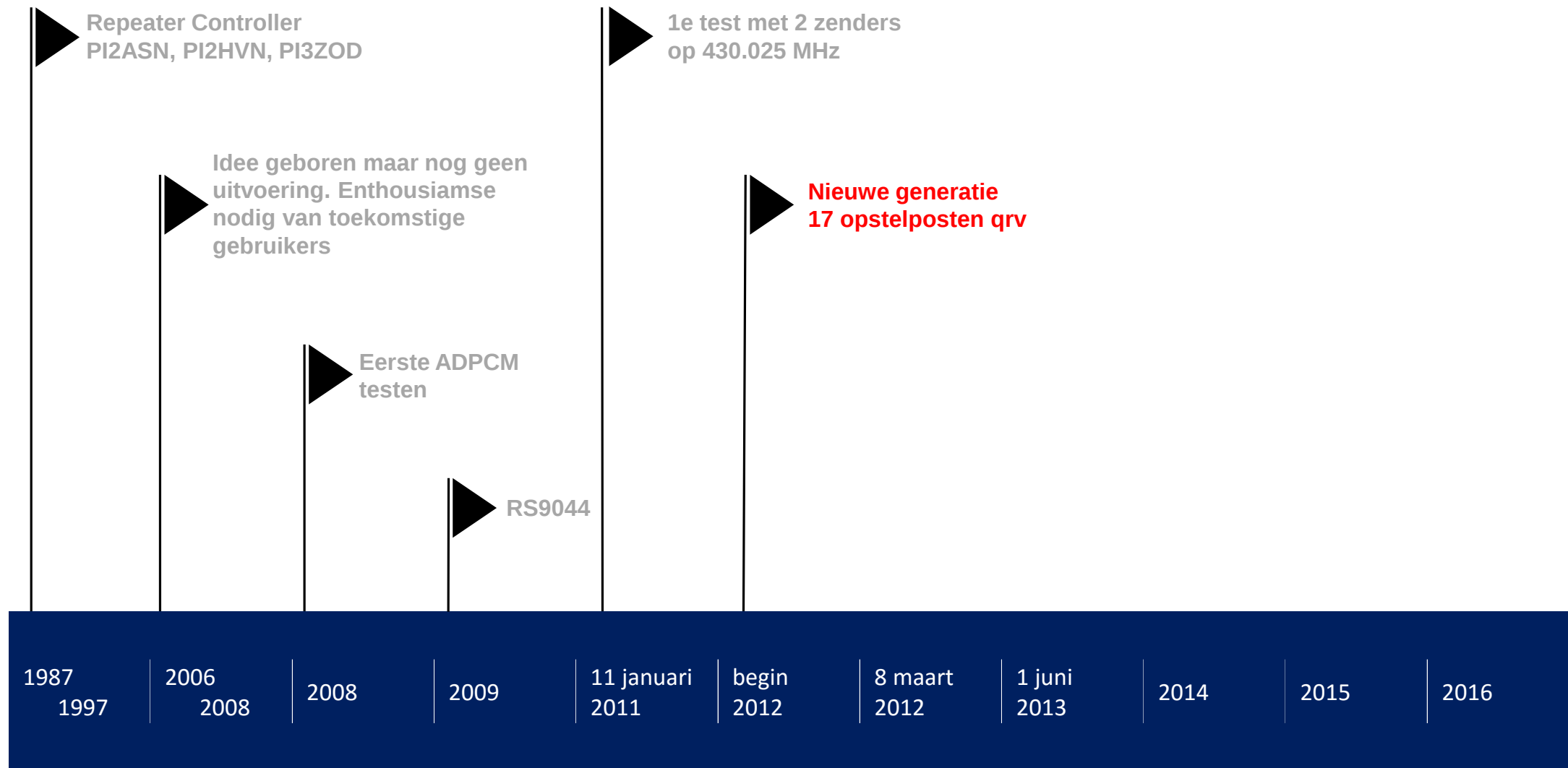
PIC 16F876
(coversity)

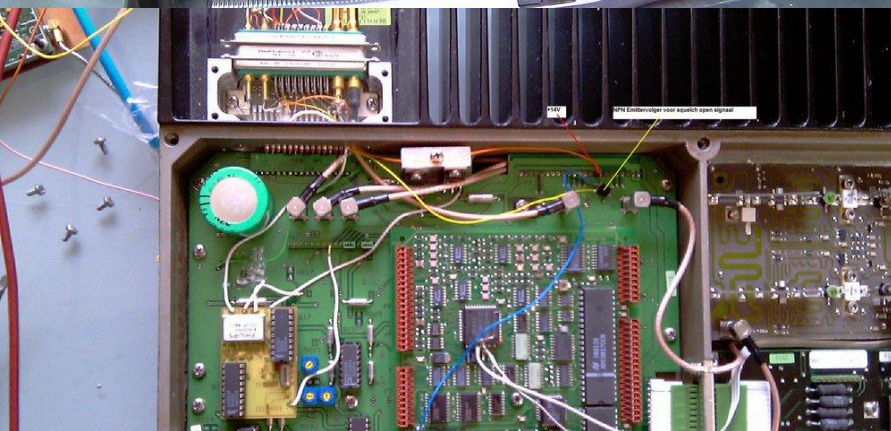
HEF4046
(pll)

GPS module

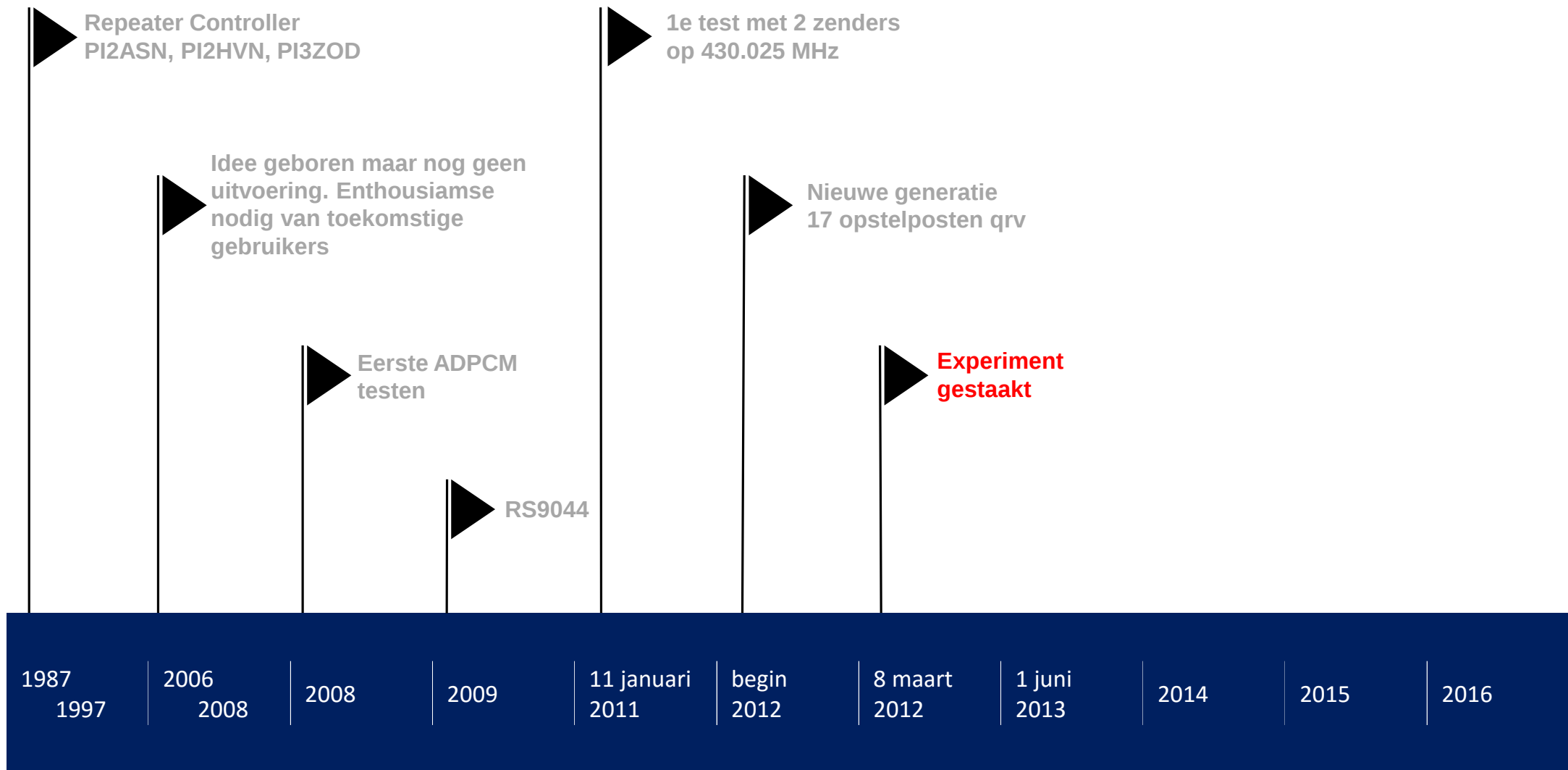


De tijdlijn van PI2NON





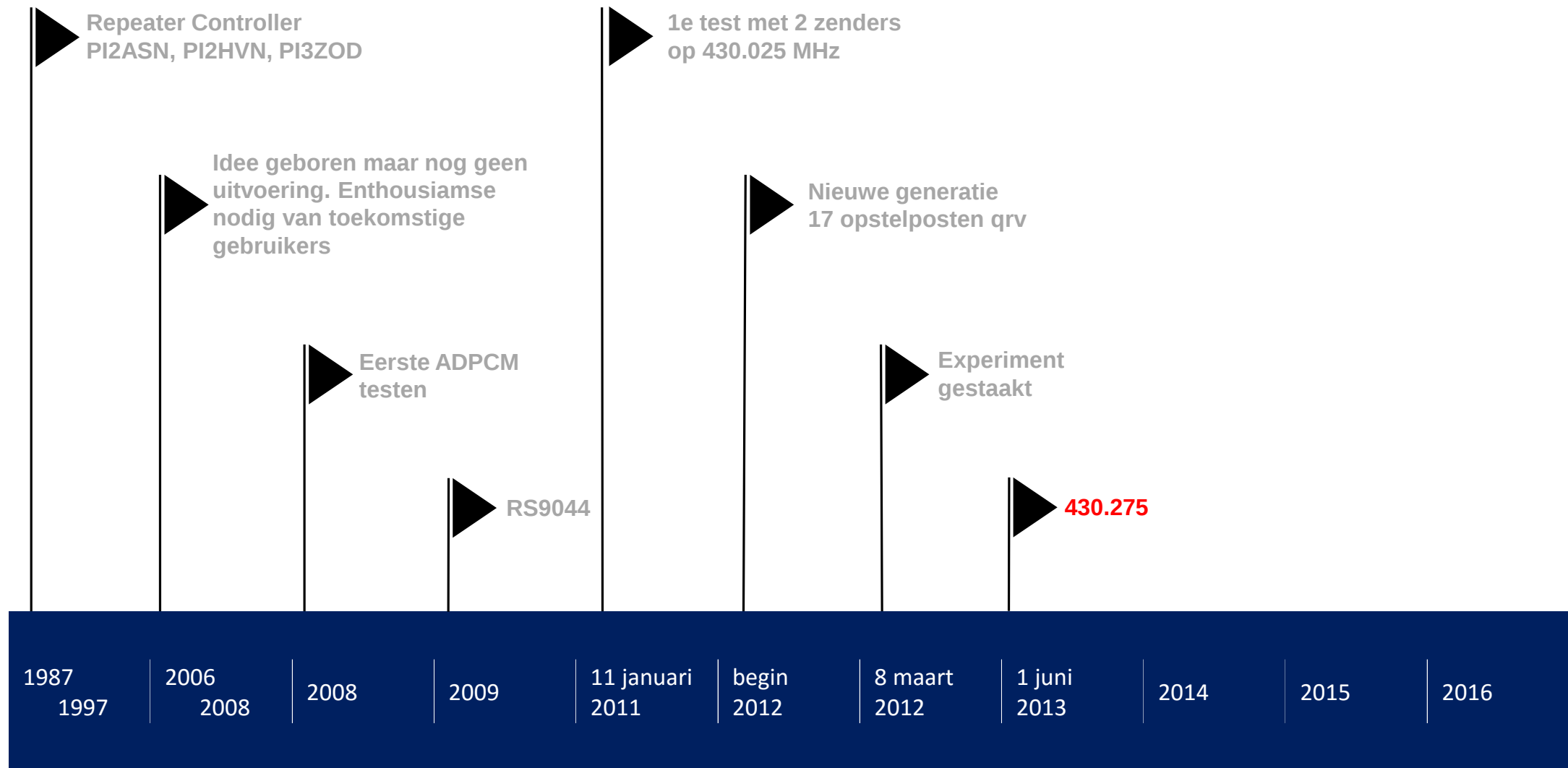
De tijdlijn van PI2NON





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De tijdlijn van PI2NON

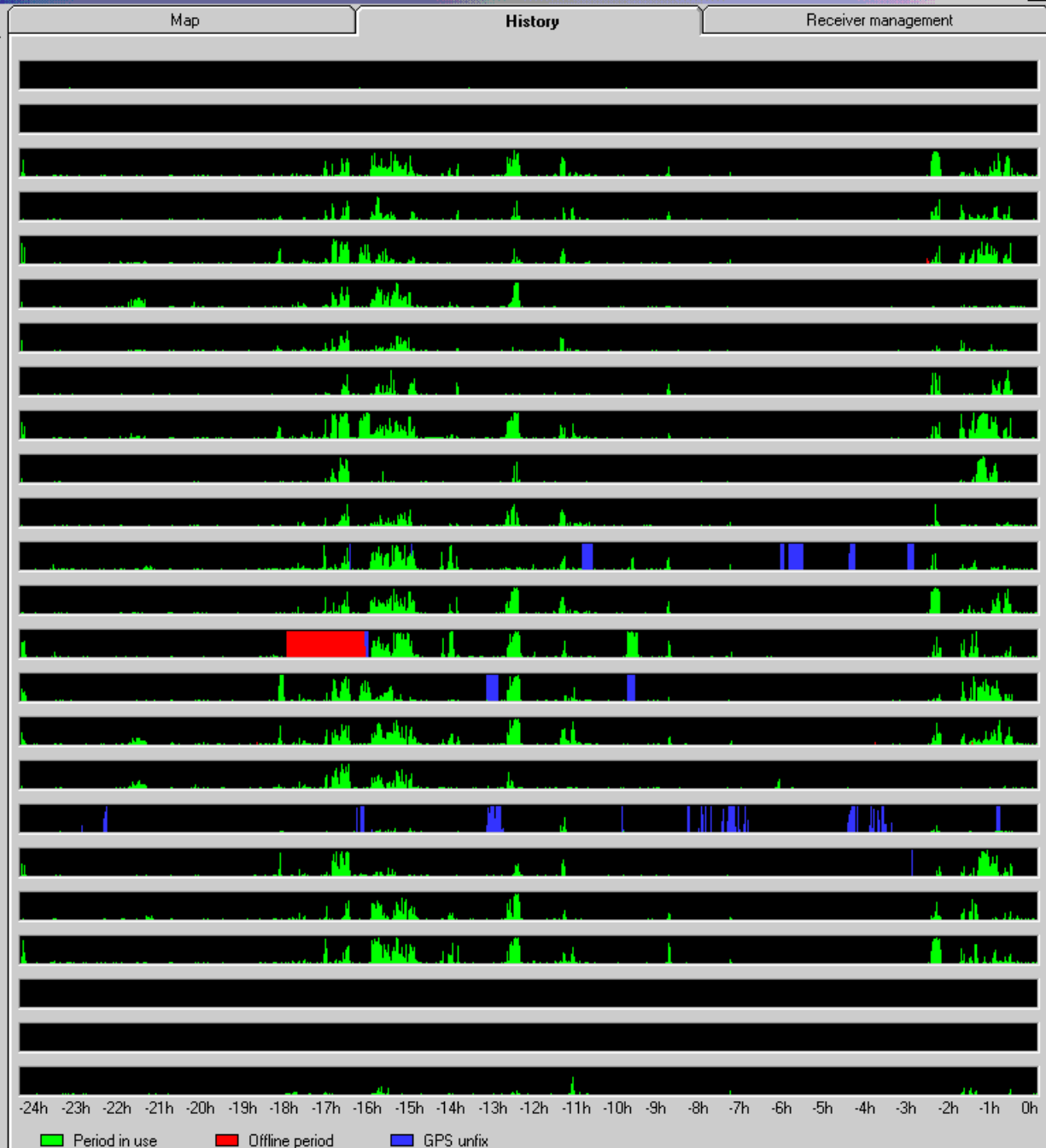


 Coversity

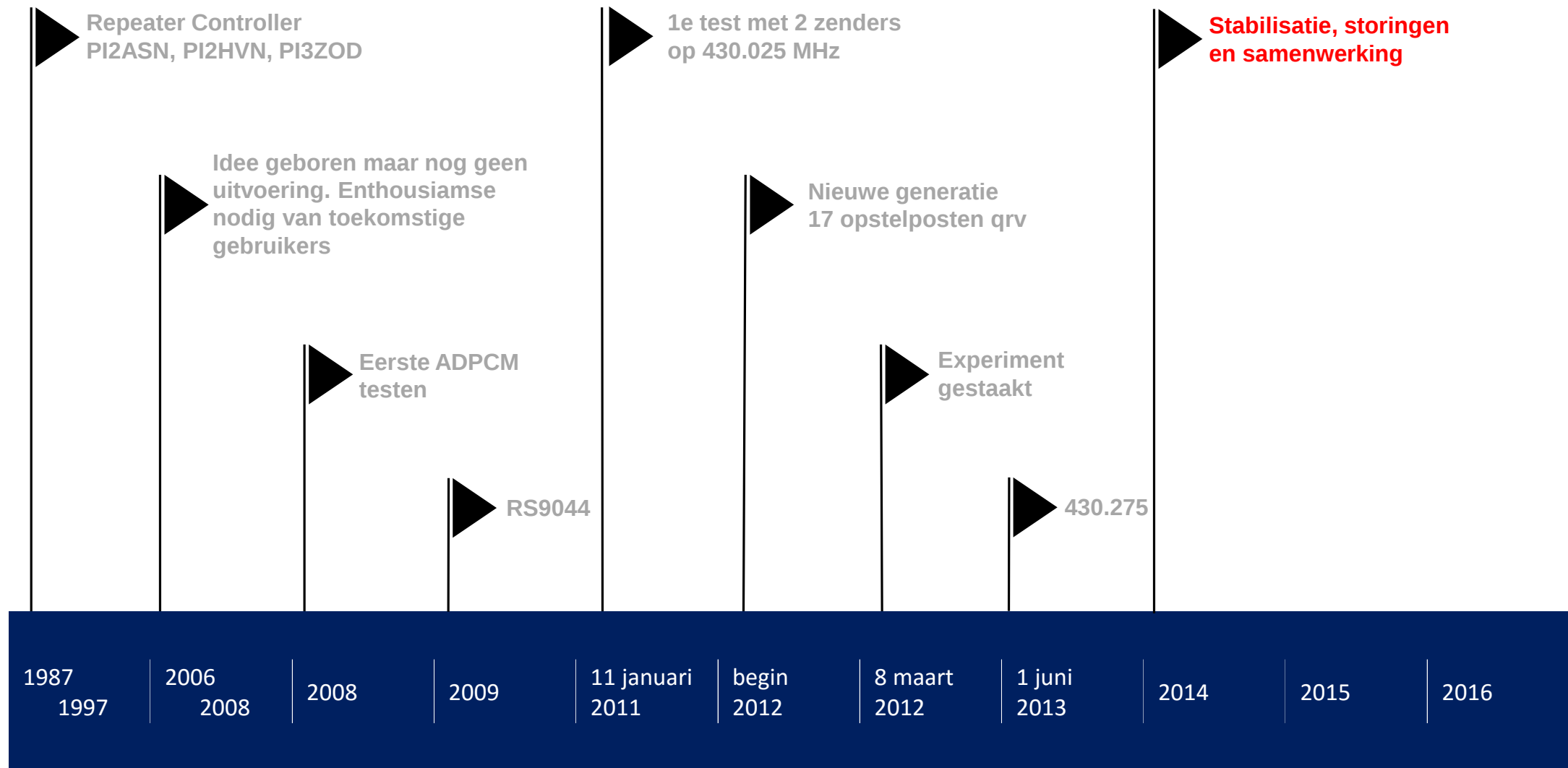
	IP address:	Audio quality:	Last usage:	Delay:	I-X	R-X	I-X	Shad	GPF	Evol	GSM	off	CA
>	Steenwijk		10:59:00 PM 11/2/2015	50 100ms	☐	☐	☐	☐	☒	☐	0	☐	☐
>	0.0.0.0		----- -----	--- ---ms	☐	☐	☐	☐	☐	☐	0	☐	☒
>	Kampen		8:45:16 AM 11/3/2015	50 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Emmen		8:38:26 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Bedum		8:07:42 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Harlingen		8:45:08 AM 11/3/2015	25 125ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Veenwouden		8:00:59 AM 11/3/2015	25 125ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Kerkenveld		8:07:40 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Groningen		8:38:34 AM 11/3/2015	25 100ms	☐	☐	☒	☐	☒	☐	0	☐	☒
>	Vlagtwedde		8:04:58 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Apeldoorn		8:45:11 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Eibergen		8:45:10 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☐
>	Koperen Hoogte		8:45:16 AM 11/3/2015	25 125ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Enschede		8:45:10 AM 11/3/2015	50 100ms	☐	☐	☐	☐	☒	☐	1	☐	☒
>	Assen		8:07:40 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Heerenveen		8:45:16 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Ameland		8:36:41 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Dwingeloo		8:07:39 AM 11/3/2015	25 100ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Delfzijl		8:07:42 AM 11/3/2015	50 125ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Groenlo		8:38:35 AM 11/3/2015	25 125ms	☐	☐	☐	☐	☒	☐	0	☐	☒
>	Den Ham		8:45:11 AM 11/3/2015	25 125ms	☐	☐	☐	☐	☒	☐	2	☐	☒
>	0.0.0.0		----- -----	--- ---ms	☐	☐	☐	☐	☐	☐	0	☐	☐
>	0.0.0.0		----- -----	--- ---ms	☐	☐	☐	☐	☐	☐	0	☐	☐
>	92.69.217.252		8:42:12 AM 11/3/2015	25 125ms	☐	☐	☐	☐	☒	☐	0	☐	☒

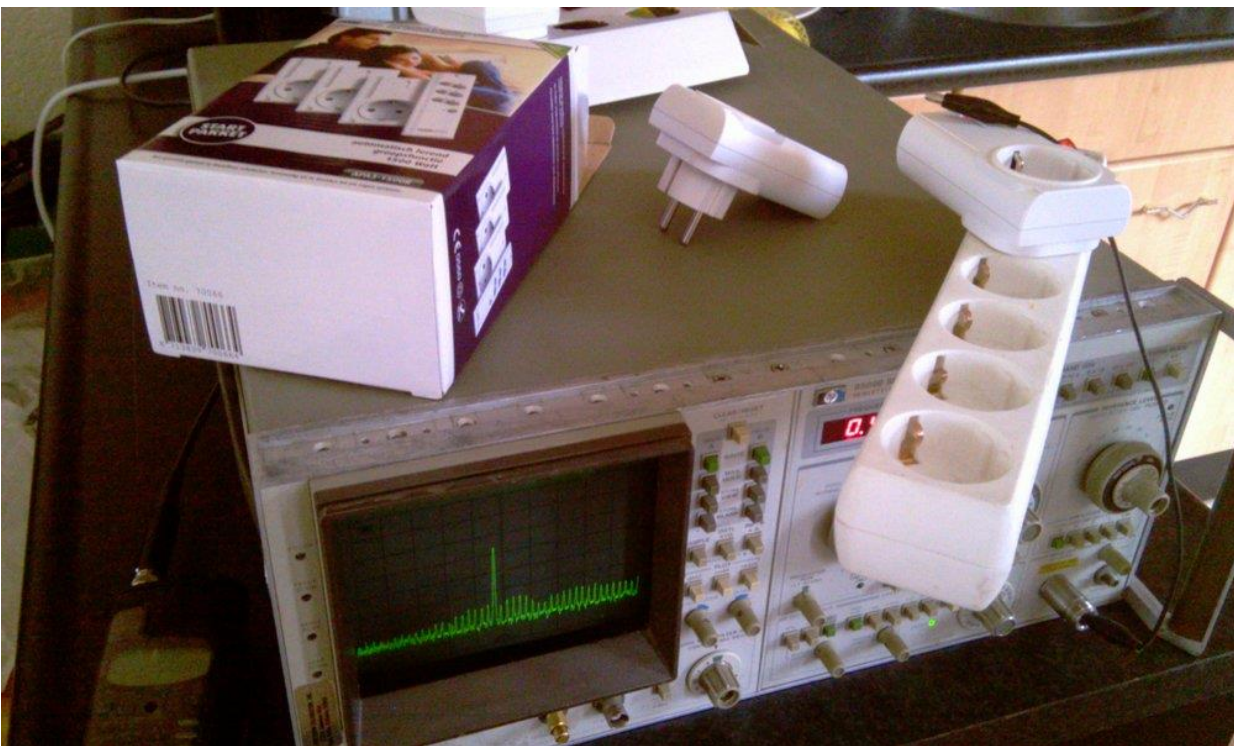
Actual audio delay: 225 ms ☐ Auto

Lost packets:	3
Maximum delay:	275 ms
Proposed delay:	350 ms

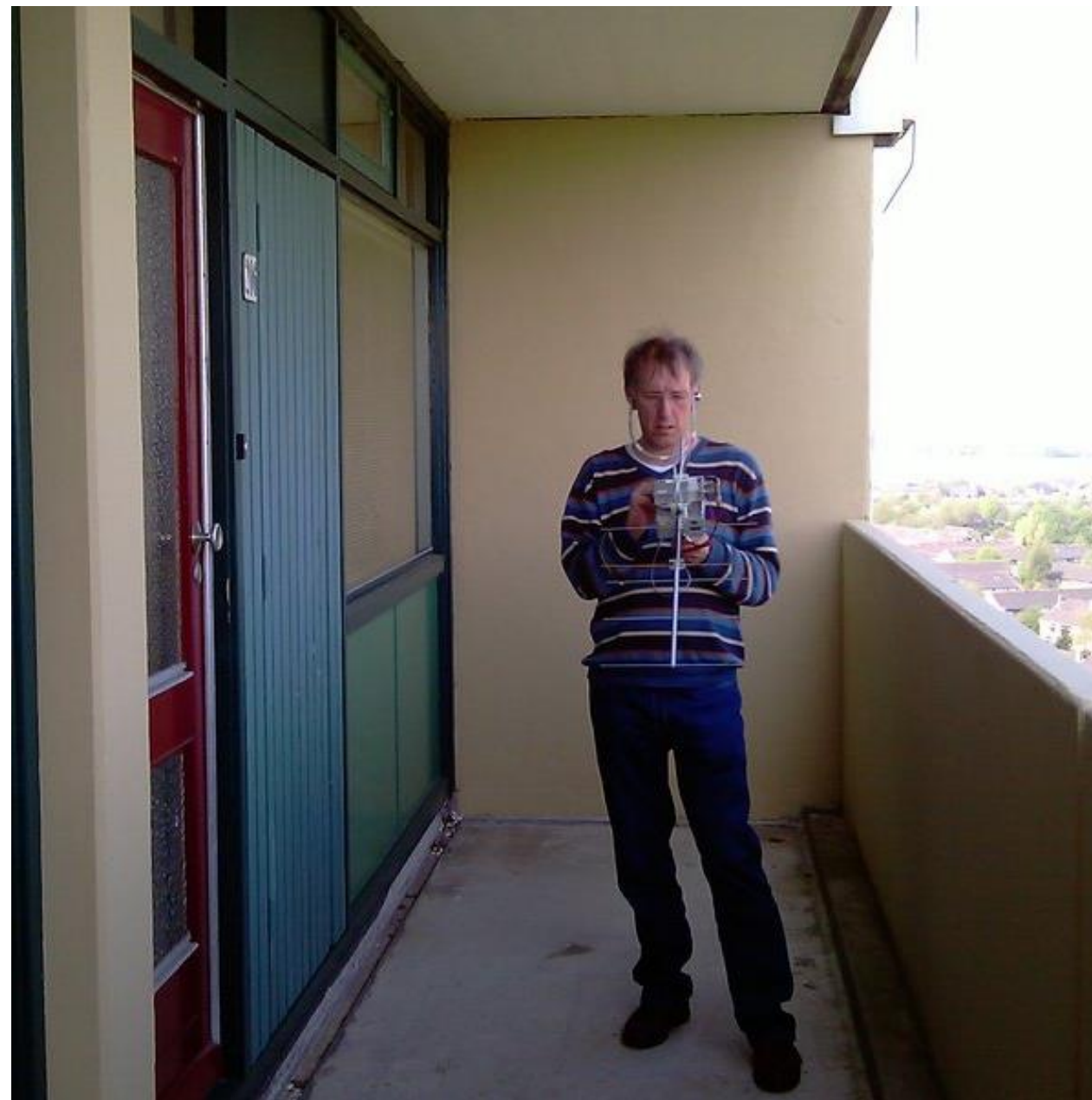


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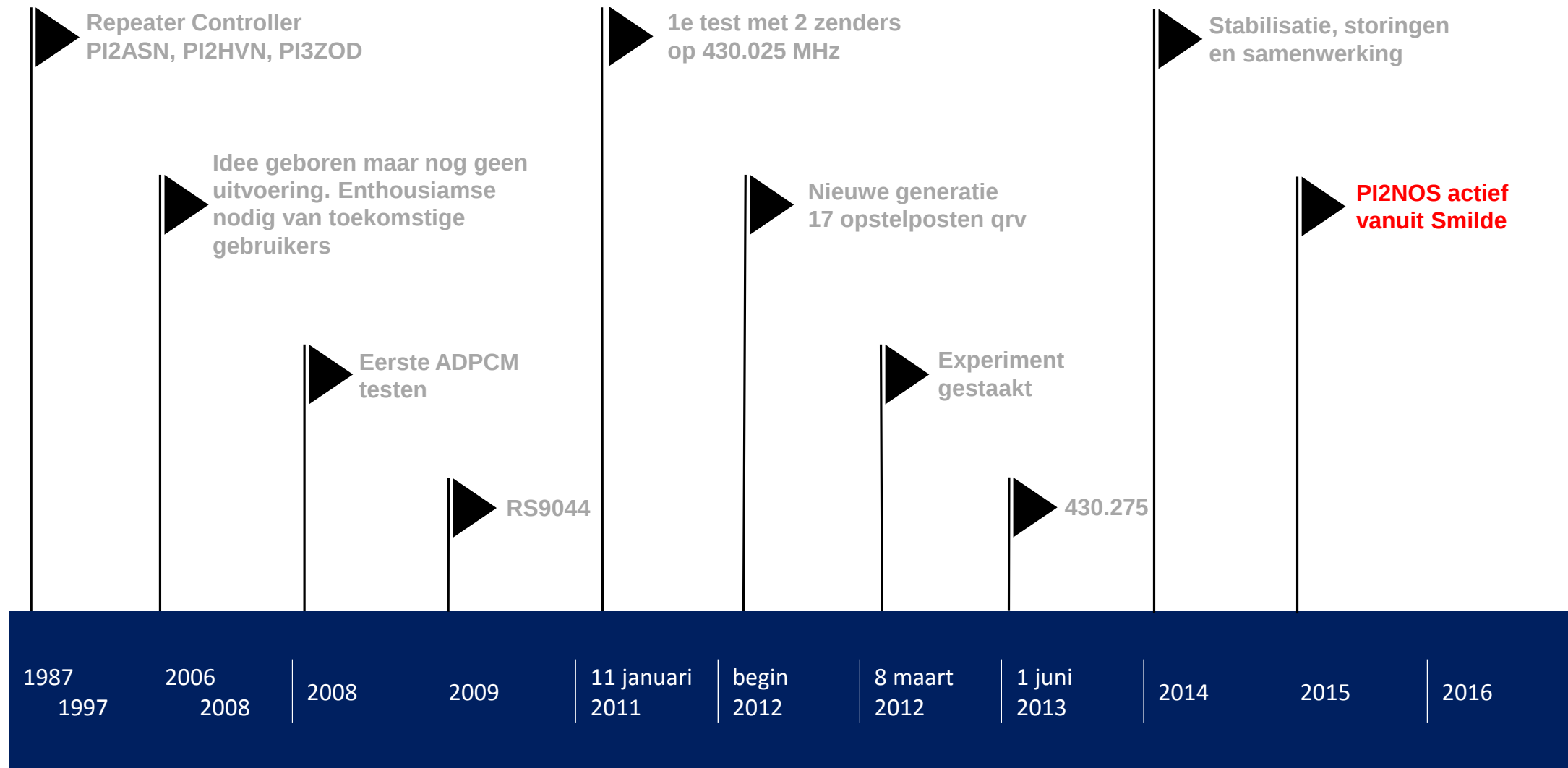


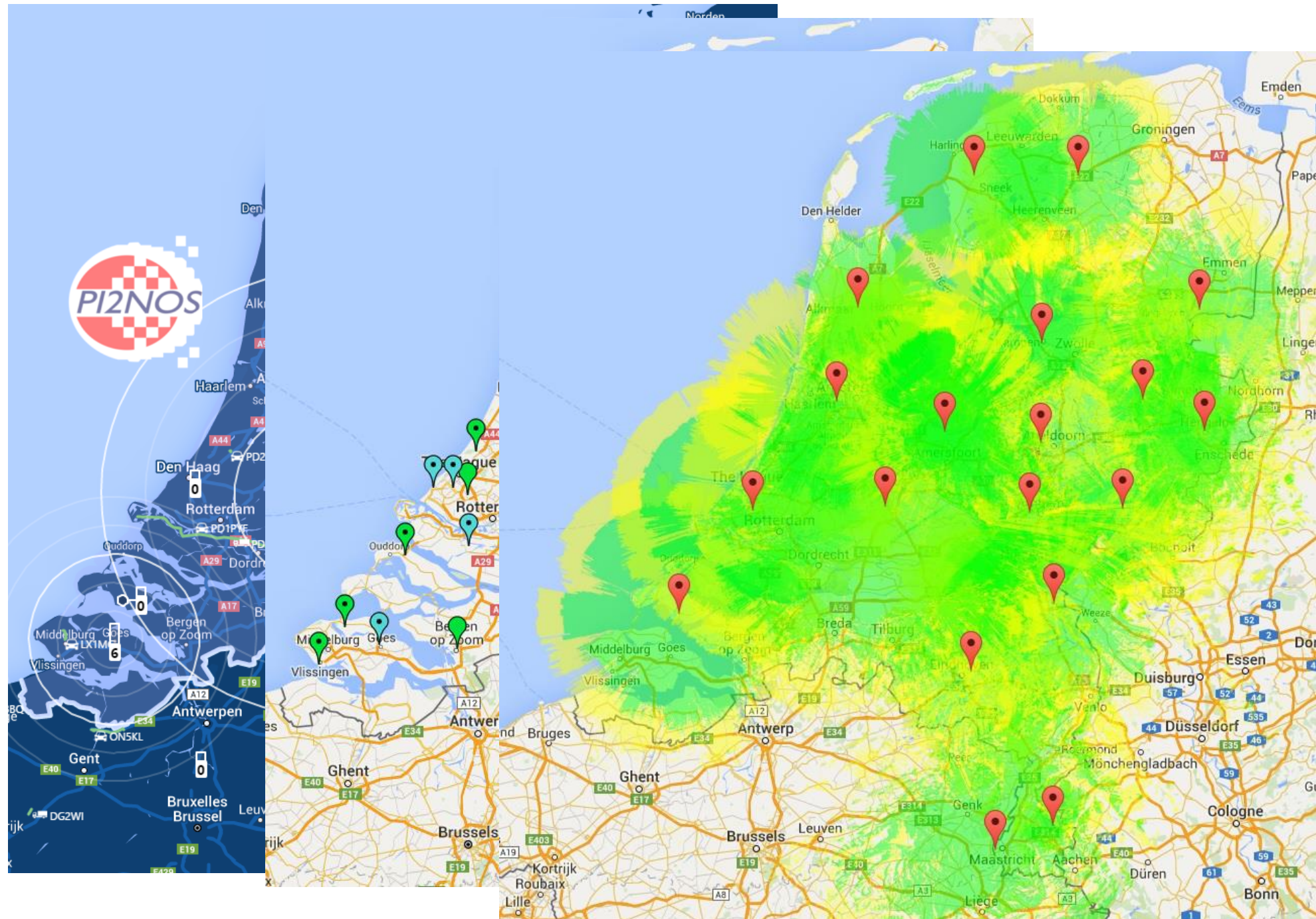


Klikkers
Deurbellen
Ongespijkerde microfoons
Knijpers
Vocht
Internet en WiFi

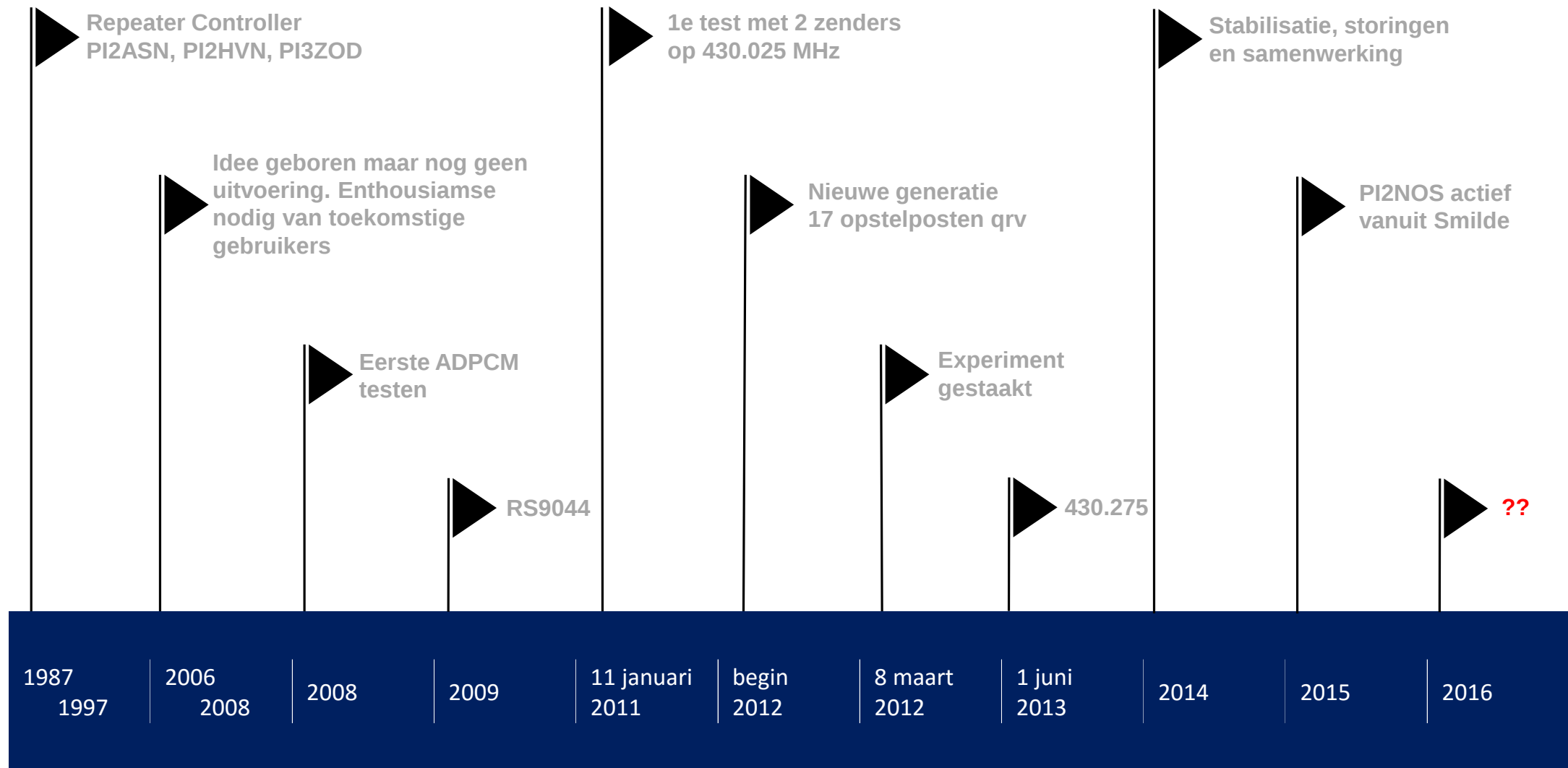


De tijdlijn van PI2NON



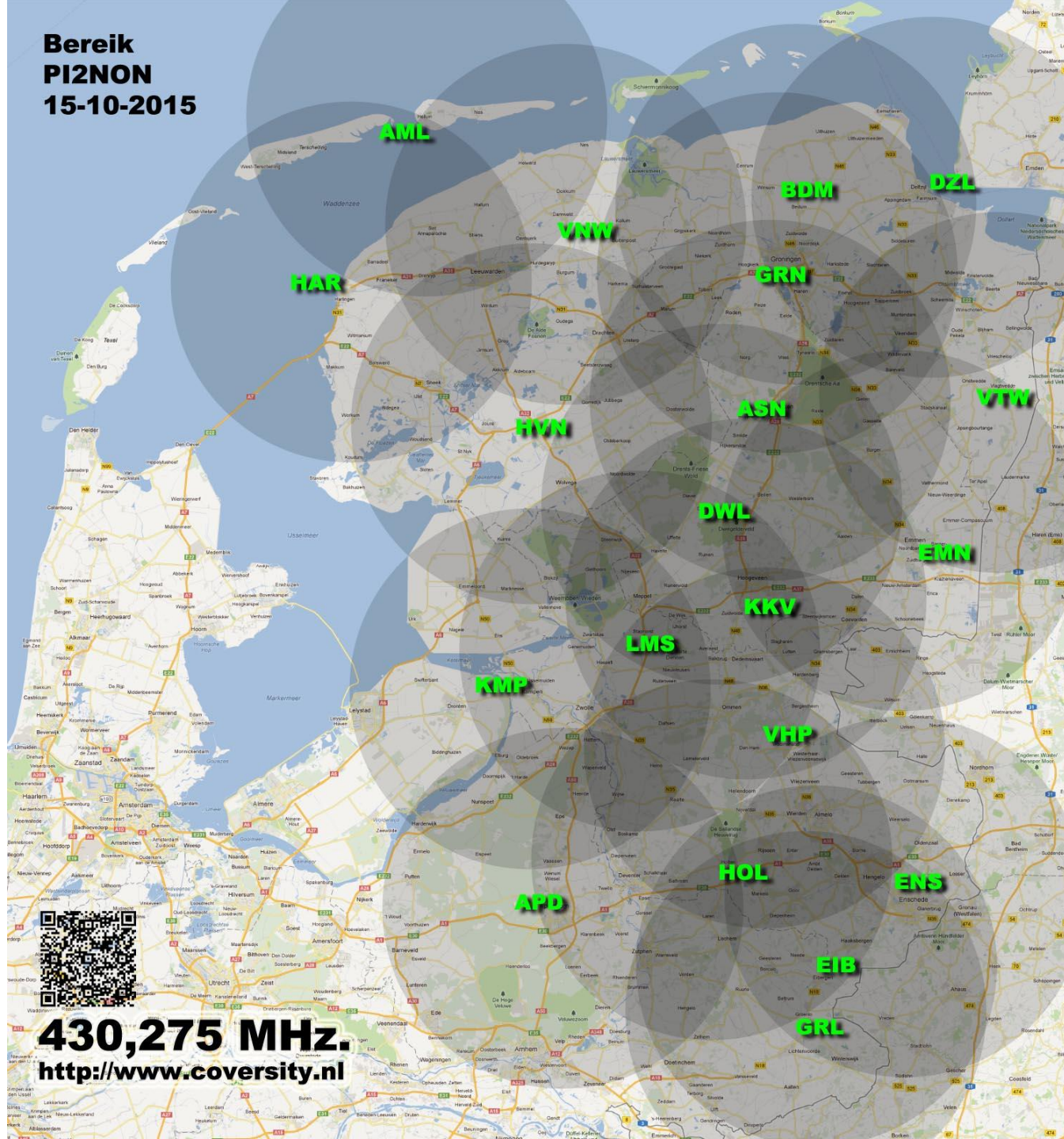


De tijdlijn van PI2NON





**Bereik
PI2NON
15-10-2015**



430,275 MHz.
<http://www.coversity.nl>

Harlingen
Ameland (Nes)
Veenwouden
Bedum
Delfzijl
Groningen (Hoogkerk)
Heerenveen
Assen
Vlagtwedde
Emmen
Dwingeloo
Kerkenveld
Kampen
de Lichtmis
Vroomshoop
Apeldoorn
Holten
Enschede
Eibergen
Groenlo