CLAIMS

1. Method for generating a radar signal (28; 28'), characterised in that the method comprises the following steps:

- a step (18) of acquiring n+1 communication signals (10.0, 10.1, 10.2, …, 10.n), where n is a non-zero natural integer, of frequency f0 for a first communication signal (10.0) and of frequency fn =f0 + n.Δf for a $(n+1)^{th}$ communication signal (10.n) where Δf is a reference frequency range, each communication signal comprising frames (12) assigned to the communication and frames (14) not assigned to the communication,
- a step (20) of inserting a radar pulse (34) into at least one frame (14) not assigned to the communication, referred to as a radar frame, of each of said n+1 communication signals (10) with a reference time common to said communication signals, in order to form said radar signal (28; 28') to the frequencies of the communication signals.

2. Method for generating a radar signal according to claim 1, characterised in that the method comprises a step (60) of obtaining an instruction (58) for transmitting a radar pulse which conditions said insertion step (20), said radar pulse transmission instruction (58) comprising a frequency (f0; f1; f2;…; fn) at which each communication signal is intended to be transmitted.

3. Method for generating a radar signal according to claim 2, characterised in that said radar pulse transmission instruction (58) comprises one or more of the following radar pulse (34) features:

- a waveform of the radar pulse (34),
- an occurrence and periodicity of the radar pulse (34),
- a duration of the radar pulse (34),
- a power of the radar pulse (34),
- a duration of a silent period following the radar pulse (34).

4. Method for generating a radar signal according to one of claims 1 to 3, characterised in that the method comprises a step (64) of adding a header (P1) in at least one radar frame of the radar signal (28; 28'), said header comprising information on the nature of the radar pulse (34).

5. Method for generating a radar signal according to one of claims 1 to 4, characterised in that each communication signal (10; 10.0, 10.1, 10.2) acquired at said acquisition step (18) is a signal using a communication protocol according to the DVB-T2 standard, and the frames (14) not assigned to the

communication of each communication signal (10.0, 10.1, 10.2) are frames of the Future Extension Frame type defined in said standard.

6. Method for generating a radar signal according to one of claims 1 to 4, characterised in that each communication signal (10; 10.0, 10.1, 10.2) acquired in said acquisition step (18) is a signal using a communication protocol according to the ATSC 3.0 standard.

7. Method for generating a radar signal according to claim 6, characterised in that after the step (20) of inserting the radar pulse (24), said n+1 communication signals (10.0, 10.1, 10.2) are multiplexed in order to form said radar signal (28').

8. Method for generating a radar signal according to claim 1, characterised in that the radar pulse (24) is inserted for a given communication signal (10.n) at a time $Tn=T0+n.\Delta T$ where ΔT designates a reference time interval and T0 designates the reference time common to the communication signals.

9. Method for generating a radar signal according to claim 8, characterised in that the reference time interval ΔT is zero.

10. Radar detection method, characterised in that the method comprises:

- a step (38) of generating a radar signal (28; 28') in accordance with the generation method (16) according to one of claims 1 to 9,
- a step (40) of transmitting said generated radar signal (28; 28'),
- a step (42) of receiving the transmitted radar signal (28; 28'),
- a step (44) of extracting the radar pulse (34) from the received radar signal (28; 28').

11. Device for generating a radar signal (28, 28’), characterised in that the device comprises:

- means (24) for acquiring n+1 communication signals (10.0, 10.1, 10.2, 10.n) where n is a non-zero natural integer, of frequency f0 for a first communication signal (10.0) and of frequency $fn=f0 + n.\Delta f$ for a $(n+1)^{th}$ communication signal (10.n) where Δf is a reference frequency range, each communication signal comprising frames (12) assigned to the communication and frames (14) not assigned to the communication,
- means (26) for inserting a radar pulse (34) into at least one frame (14), referred to as a radar frame, not assigned to the communication, of each of said communication signals with a reference time common to said communication signals, in order to form said radar signal (28; 28') to the frequencies of the communication signals.

12. Device for generating a radar signal according to claim 11, characterised in that the device further comprises multiplexing means adapted to multiplex a plurality of communication signals, into which a radar pulse has been inserted by said insertion means (26), so as to form the radar signal (28').

13. Radar detection system, characterised in that the system comprises

- at least one device (22) for generating a radar signal according to claim 11 or 12,
- at least one transmitter (48a, 48b, 48c) adapted to transmit said radar signal (28; 28') generated by a device for generating a radar signal,
- at least one receiver (50) adapted to receive said radar signal (28; 28') transmitted by a transmitter,
- means (56) for extracting the radar pulse (34) from the radar signal (28; 28') received by a receiver.

14. System according to claim 13, characterised in that the system further comprises demultiplexing means for demultiplexing said radar signal (28') received at the output of said at least one receiver (50) into a plurality of communication signals from which the radar pulse (34) is extracted by said extraction means (56).