CLAIMS

1.- A software defined radio emission/reception radio sub-system ~~(12)~~ being part of software defined radio equipment ~~(10)~~, including a radio processing chain ~~(18)~~, achieving for emission, the transformation of a digitised signal stemming from a software defined radio application into an electromagnetic signal capable of being conveyed by radio media, and vice versa, for reception, the transformation of an electromagnetic signal stemming from the radio media into a digitised signal capable of being processed by a software defined application, and a software control module ~~(22)~~ capable of driving said radio processing chain ~~(18)~~ while strictly observing primary control requests ~~(RP)~~ from a software defined radio application, also called primary software defined radio application ~~(14)~~, the software defined radio emission/reception radio sub-system ~~(12)~~ being characterised in that it is capable of processing secondary requests from at least one other software defined radio application ~~(16)~~ also called secondary software defined radio application, independent of the primary software defined radio application ~~(14)~~, by applying means for:

- receiving ~~(30)~~ at least one secondary control request ~~(RS)~~ of a so called secondary software defined radio application ~~(16)~~,
- determining ~~(36)~~ at least one primary inactivity period ~~(P)~~ of said radio processing chain ~~(18)~~ corresponding to the non-use of said radio processing chain according to the primary control requests ~~(RP)~~ emitted by the primary software defined radio application ~~(14)~~, and
- activating ~~(35)~~ by means of an interface ~~(28)~~ said radio processing chain ~~(18)~~ so as to satisfy for a determined primary inactivity period ~~(P)~~ at least one secondary control request ~~(RP)~~ emitted by at least one secondary software defined radio application ~~(16)~~.

~~2.- The software defined radio emission/reception radio sub-system according to claim 1, characterized in that~~ wherein the software control modules ~~(22)~~ is further capable of determining, for a given determined primary inactivity period ~~(P)~~ whether the duration of the primary inactivity period ~~(P)~~ is sufficient for completely satisfying a received secondary control request, and in that the means ~~(35)~~ for activating said radio processing chain ~~(18)~~ are only applied in the case of positive determination.

~~3~~2.- The software defined radio emission/reception radio sub-system according to any of claims ~~1 or 2~~, characterised in that a primary control request includes at least one piece of signal information relating to the signal to be emitted or to be received and at least one

piece of time information relating to a time instant ~~(t_s)~~ of the beginning of emission or reception.

43.- The software defined radio emission/reception radio sub-system according to any of claims 1 or 2~~to 3~~, characterised in that a secondary control request includes at least one piece of signal information relating to the signal to be emitted or to be received, but does not include any time information relating to the time instant of the beginning of emission or reception.

54.- The software defined radio emission/reception radio sub-system according to any of claims ~~3~~2 or 43, characterised in that said piece of signal information comprises frequency information on the signal to be emitted or to be received, and a piece of information on the number of digital samples of signal to be emitted or to be received.

65.- The software defined radio emission/reception radio sub-system according to any of claims 1 to ~~5~~4, characterised in that it includes means for storing in memory a pending secondary control request.

76.- The software defined radio emission/reception radio sub-system according to any of claims 1 to ~~5~~4, characterised in that it includes means for receiving ~~(30)~~ and storing in memory several secondary control requests each stemming from a different secondary software defined radio application, and in that the software control module ~~(22)~~ includes a means for selecting secondary control requests to be processed according to a predetermined order.

87.- The software defined radio equipment ~~(10)~~ comprising a software defined radio emission/reception radio sub-system ~~(12)~~ according to any of claims 1 to ~~7~~6, a primary software defined radio application ~~(14)~~ and a secondary software defined radio application ~~(16)~~ capable of interfacing with the radio emission/reception sub-system, characterised in that the primary software defined radio application ~~(14)~~ is a telecommunications application and in that the secondary software defined radio application ~~(16)~~ is a cognitive radio application.