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Therefore, this

## United States Patent

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Director of the United States Patent and Trademark Office



# (12) United States Patent

van Ardenne

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54)	ANTENNA SYSTEM AND METHOD FOR
500	MANUFACTURING SAME

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- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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#### ABSTRACT

An antenna system of the phased array type, with a carrier of electrically insulating material and at least two antenna units, which each comprise a receiving device for electromagnetic radiation and of which the receiving device is connected with a time- or phase-shifting circuit. The receiving devices of the antenna units are connected with each other via the time- or phase-shifting circuit through a combining circuit. The antenna units comprise a recess in the surface of the carrier, having on a recess-defining recess surface of the carrier at least partly a layer of electrically conductive material and having at least one focus; wherein the at least one receiving device is located in or near the focus.

### 20 Claims, 4 Drawing Sheets



