



# United States Patent [19]

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LeBlanc et al.

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[54] POSITIONING SYSTEM AND METHOD

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[51] Int. Cl.<sup>6</sup> ..... **H04Q 7/22**; G01S 3/02

[52] U.S. Cl. .... **379/60**; 379/59; 342/450; 342/457

[58] Field of Search ..... 379/58, 59, 61, 379/45, 37, 50, 51; 342/450, 451, 452, 453, 454, 457, 458, 463; 370/110.1; 455/67.1, 33.1

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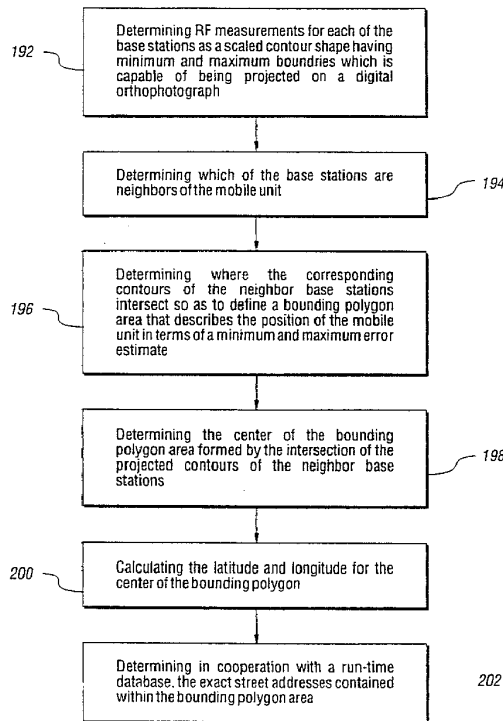
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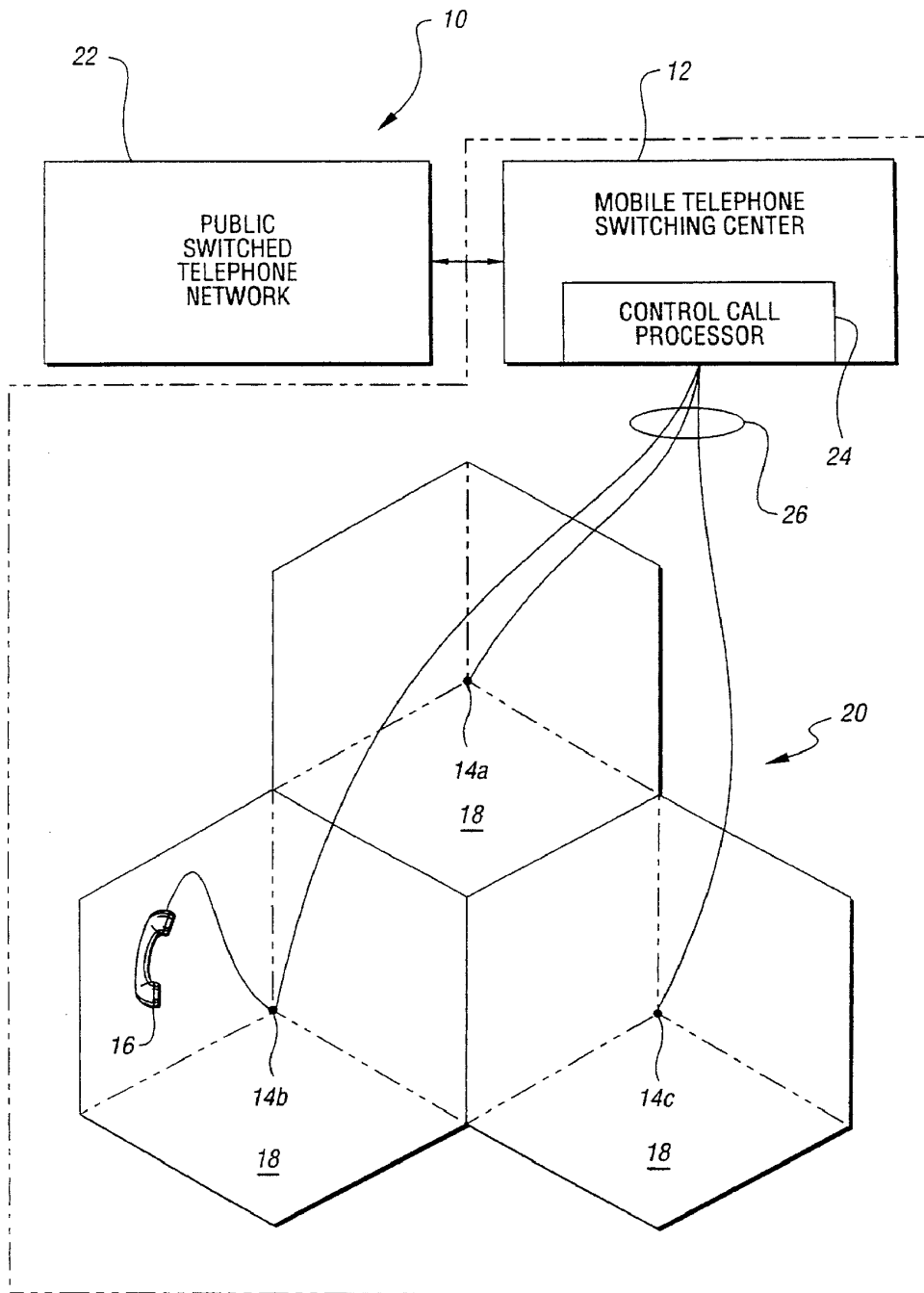
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### [57] ABSTRACT

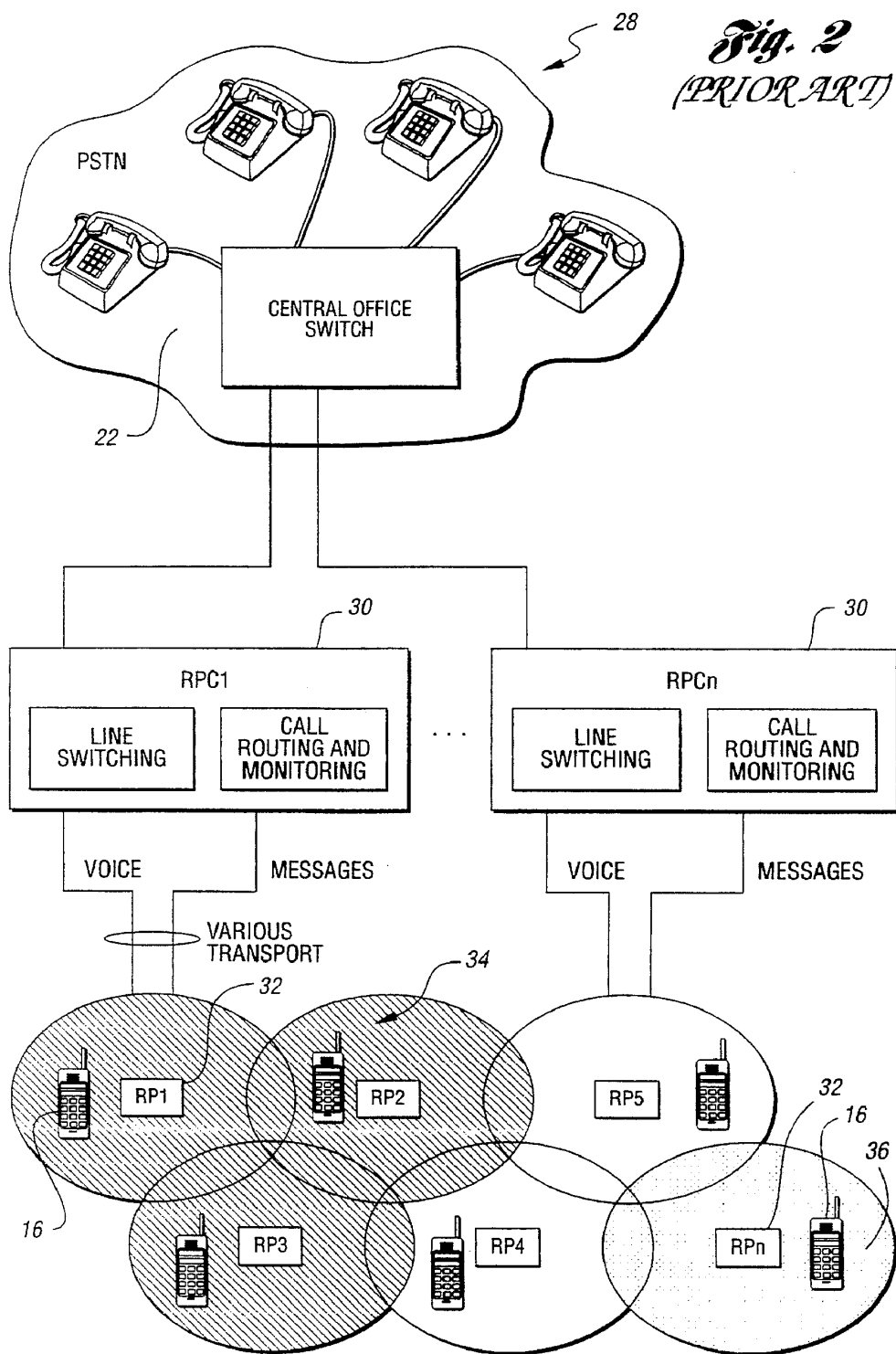
An improved positioning system and method for use in a wireless communication system including a plurality of base stations each having a corresponding coverage area. Scaled contour shapes are generated having minimum and maximum boundaries based upon determined RF measurements of each of the base stations. The intersections of the contour shapes define a bounding polygon area that describes the position of a mobile unit in terms of minimum and maximum error estimate. Once the bounding polygon area has been defined, the latitude and longitude of the center of the polygon area is determined whereupon corresponding street addresses may be obtained through reference to one or more databases.

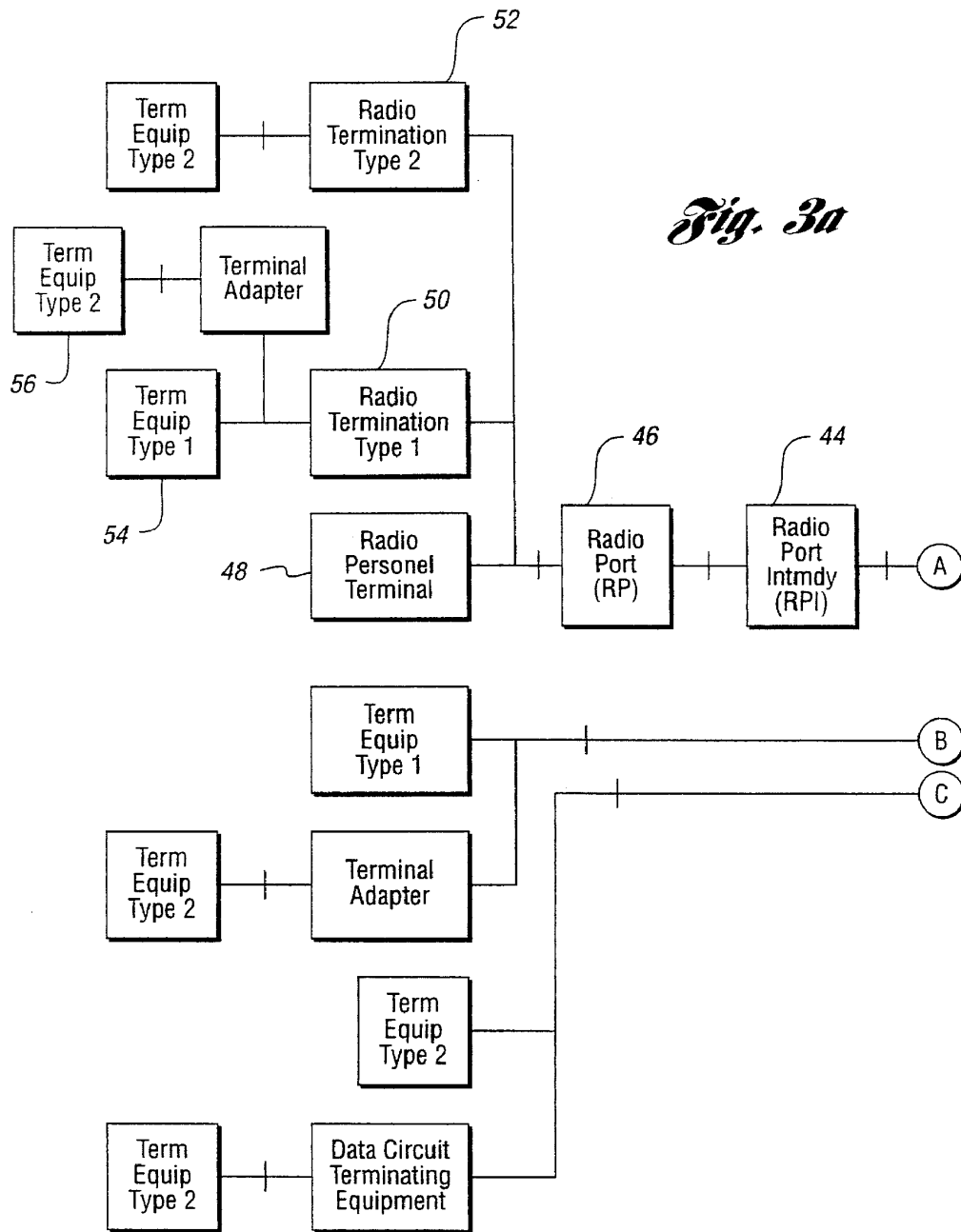
19 Claims, 20 Drawing Sheets



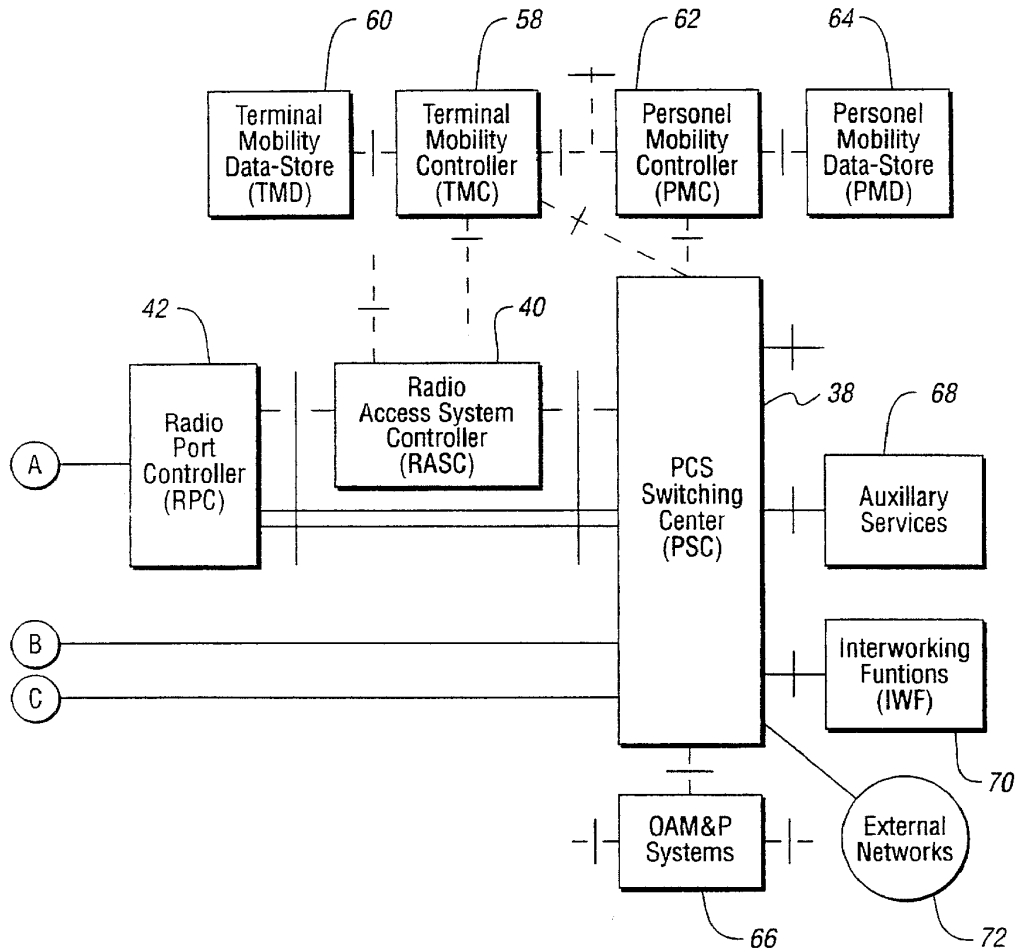


*Fig. 1 (PRIOR ART)*





*Fig. 3a*



*Fig. 3b*

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