

EXHIBIT B

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Hylin et al.

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(54) **DIGITAL INFORMATION SYSTEM** 5,109,384 A * 4/1992 Tseung 714/748
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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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This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

IBM Digital Media Distributor, IBM brochure, date unknown.

(63) Continuation-in-part of application No. 08/676,517, filed on Jul. 2, 1996, now Pat. No. 6,005,534.

Primary Examiner—David L. Lewis

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(30) **Foreign Application Priority Data**

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(57) **ABSTRACT**

The invention relates to a digital information system for displaying information on at least one display means with the aid of at least one television set or camera. The exposures are presented at places accessible to and frequented by a general public. The information system includes external information mediators and information is controlled dynamically through the medium of a communication interface and through the medium of an exposure handler in a central computer. The inventive system also includes a communication interface against an elective number of cinema computers having connected television or camera computers which control television sets or cameras for displaying pictures or exposures. The cinema computers and peripheral equipment are situated at mutually distanced places.

(51) **Int. Cl.**

G09G 5/00 (2006.01)
G06Q 10/00 (2006.01)

(52) **U.S. Cl.** **345/2.1**; 345/2.2; 705/5; 705/6

(58) **Field of Classification Search** 345/1.1–1.3, 345/2.1–2.3, 3.1; 705/5–14; 701/200, 213; 455/419

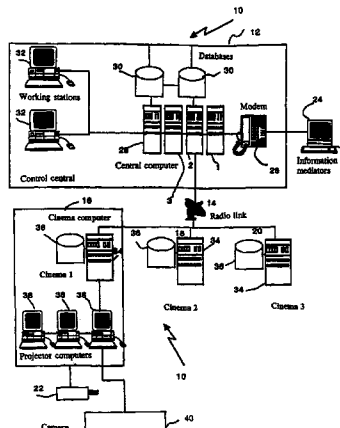
See application file for complete search history.

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42 Claims, 1 Drawing Sheet



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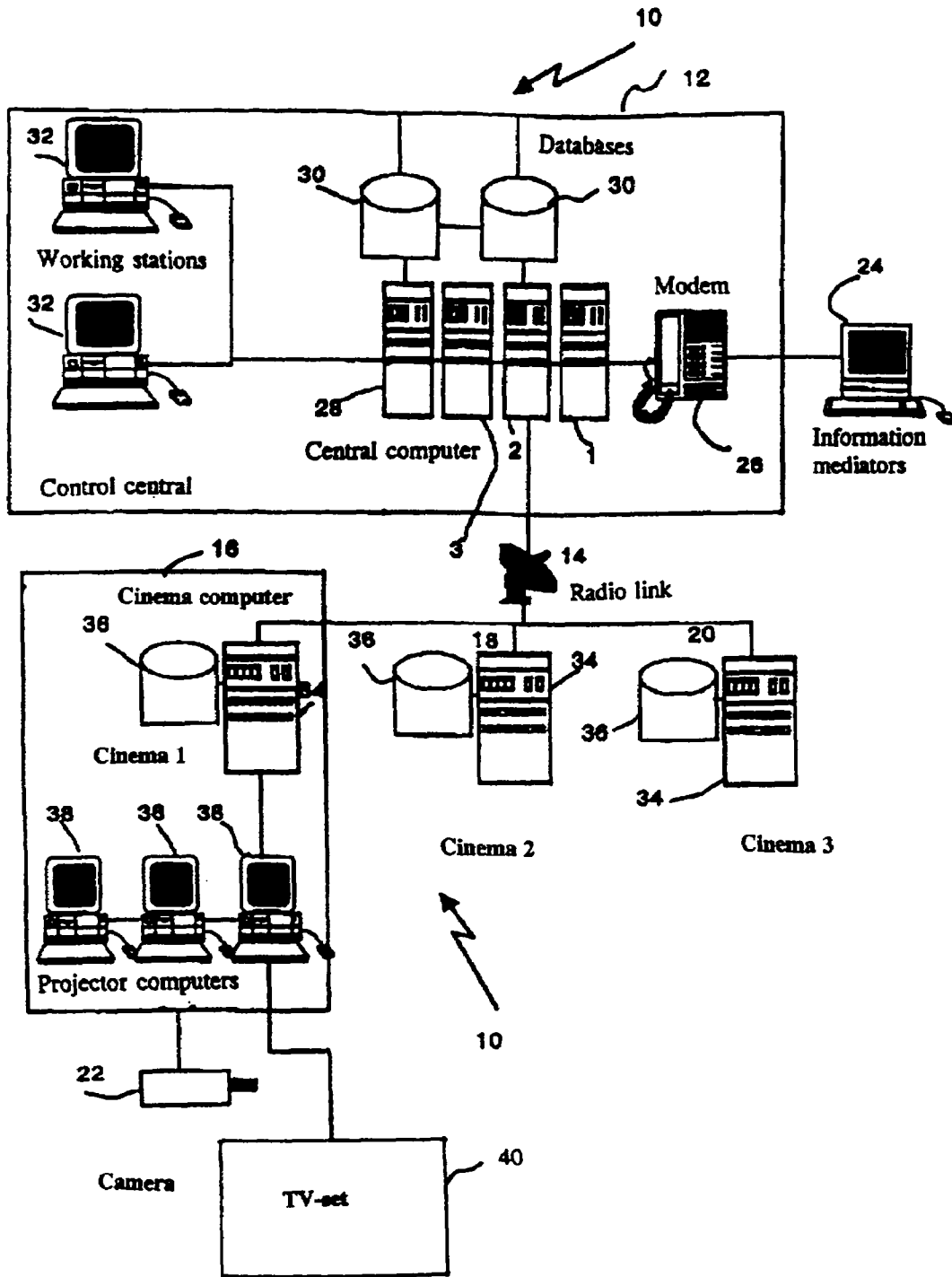
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DIGITAL INFORMATION SYSTEM**CROSS-REFERENCE TO RELATED APPLICATIONS**

The present application is a continuation-in-part of application Ser. No. 08/676,517, filed on Jul. 2, 1996 now U.S. Pat. No. 6,004,534, the disclosure of which is expressly incorporated by reference herein in its entirety.

TECHNICAL FIELD

The present invention relates to a method and to an arrangement for controlling and coordinating television sets, with peripheral equipment, or cameras, with peripheral equipment, in a digital information system for displaying information on at least one display device through the medium of at least one television set or camera for each said device, said information being displayed in places such as cinemas, private homes, onboard air-crafts, onboard trains, onboard ships, main railway stations, subway stations, airport waiting lounges etc, and generally every were advertisements, films, movies and other information is displayed through the medium of television sets or cameras.

DESCRIPTION OF THE BACKGROUND ART

Systems that are used to show information in the form of advertisements, timetable messages or arrival and departure times in present-day public service infrastructures with regard to buses, trains, subway traffic, etc., is of a static nature. Such information is given on notice boards, posters, charts, tables, verbally through loudspeakers, and on digital displays, etc. A characteristic feature of such information media is that the information media is not coordinated, but is in the form of individual items which are controlled and updated separately, often manually.

Modern digital displays used, e.g., in conjunction with subway railway traffic gives some of the aforesaid information but is not controlled to display advertisements, warning messages, etc. Furthermore, the information is often supplemented with verbal messages transmitted from traffic control centers. The information channel cannot be subscribed to directly for the display of external information suppliers, such as advertising bureaux, the authorities, newspapers, etc., but is processed administratively and fed manually into the information display systems.

Although the administration of information is often processed manually with the aid of modern computer technology, the available display time will nevertheless contain "dead time", among other things due to back-logging caused by the manual infeed process.

Thus, present-day systems do not enable information to be updated dynamically for display in real time. Neither do present-day systems enable external mediators to update information for display in a central control system, nor yet the administrator who makes the display of information available, but that it is the administrator who determines when, where and how the information shall be displayed.

The present-day static information display systems are therefore beset with a number of problems.

Also known to the art are systems for displaying or showing picture series in local public places, such as assembly halls, lecture halls, and conference rooms in industry. The systems comprise diapositive television set or cameras

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overlaps, so as to avoid the risk of boring viewers, as with conventional display with diapositive television set or cameras. The computer control of such systems may well be both complicated and advanced.

Unfortunately, these systems are nevertheless static insofar as they are used in one and the same locality and controlled and managed on the display site. The display must be planned carefully beforehand, this planning often being carried out by experts within the technical field in question, so as to obtain a finished display product. For instance, when a company wishes to change its display and introduce a new picture series combined with sound, the process again becomes static by virtue of the need to employ experts to program and arrange the new display.

The same problem as that mentioned above is also met when showing pictures through diapositive television set or cameras in one and the same locality, because the display subscriber has very little chance of influencing the display, especially in real time. The picture display is directed towards a limited public and towards scheduled display of one and the same information material to the public concerned. The picture display is not directed to a large number of people, as in the case of a railway station platform, a subway platform or in airports. In places of this nature, it should be possible to spread the information and to display different information in different places within said stations and it should be possible to update and change the information quickly. When the information displayed on said stations is not effectively coordinated, the displays on which information is presented will often become static, for instance show the time of the next display or show a pause picture, i.e. dead time. This becomes nerve-wracking to travelers, who often wait for long periods in waiting halls or stand on platforms. Neither is the failure to utilize expensive information display equipment to the highest possible degree compatible with good economy.

Further, It is a known problem when new films or movies are to be released at different locations such as cinemas that there are pirate copies made when the movies or films are distributed to the locations where they are going to be displayed to the public.

Still further, the advertisement sent at cinemas during the projection of a film is static, i.e. not instantly changeable.

Also, for advertisement on television the same drawbacks as for other systems are valid e.g. concerning changing of advertisement spots.

Yet further, the new standards for digital television will in a near future revolutionary television viewers demands on available services, such as pay per view, video on demand, interactive viewing etc, not to say what would be the case if it is combined with satellite transmission or cable carried broadband transmission.

SUMMARY OF THE INVENTION

The present invention aims to provide a flexible system in which external information mediators are able to dynamically control in real time the transmission of display instructions to a larger public in different places situated at any chosen distance apart through television sets or cameras which project information onto displays intended herefor.

An achievement of the invention is to allow video on demand and pay per view on television sets and other medium intended for display of information.

Another achievement is to make it possible to distribute,

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