面向21世纪 交通版

高等学校试用教材

交通工程专业英语

裴玉龙 主编

俞同华 主审



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ENGLISH IN TRAFFIC ENGINEERING

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内 容 提 要

交通工程专业英语(English in Traffic Engineering)是为了满足高等院校交通类专业英语课程教学的需要，根据高等院校培养目标的要求而编写的。

本书题材选自国外正式出版物，选题广泛，在编写中吸取了我国其他专业英语教材的优点和基础英语课教学的经验。本书在符合专业英语教学需要的同时，其内容基本覆盖了现代交通工程专业技术的主要方面。

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Contents

Unit 1

Text

The Evolution of Transport

The evolution of transport has been closely linked to the development of humankind throughout the earth's history. Transport's early function was to meet the basic need of hauling food supplies and building materials. But with the formation of tribes, then peoples, and finally nations, the societal and economic functions of transport became more and more complex. At first there was mobility required for individuals, clans, households, and animals to protect them against, and to escape from, the dangers of natural disasters and tribal aggressions, and in the search for the best places to settle. As tribal groups formed and gradually established their geographical identity, transport was increasingly needed to open up regions for development, to provide access to natural resources, to promote intercommunal trade, and to mobilize territorial defense. When the first nations came into being, transport played a major role in establishing national integrity.

After basic societal needs had generally been attended to, local communities could increasingly devote their efforts to enhancing their economic, cultural, and technological development through trade links with other peoples and regions. Again, transport provided the mobility required for such intertribal, international, and finally intercontinental cultural exchange and trade. During all of this gradual development toward an organized human society, represented today through the international family of nations, transport as physical process of moving people and goods, thus promoting such development, continuously underwent technological and organizational changes. Such changes were induced by several factors and circumstances. In fact, today's transport in its various forms and organizational arrangements remains highly subject to changes in response to societal requirements and preferences.

Clearly, the first and foremost criterion to be satisfied by transport was efficiency. For centuries, and particularly during the takeoff stages of local economies, society required reliable, fast, and low-cost transport. The search for appropriate technologies was relatively unconstrained. There were times in human history when the demand for reliable and fast transport was especially pronounced, and quick solutions were required for national self-defense. During such periods of local and international conflict, human ingenuity devised new transport technologies which often proved to be the decisive element for survival, and sometimes victory. Subsequently refined and developed, such new technologies made it possible to better meet increasing transport demand, thus improving both economic progress and human welfare.

The need for better strategic mobility induced efforts to improve sea and land transport. This resulted in bigger and faster ships and more reliable and sturdy land vehicles. Eventually, self-propulsion was introduced, exemplified by steamboats, the railways, and then the automobile. Research and development in the transport field finally became an organized undertaking with specific goals and objectives. As the result of the consequent concentration of talent and expertise, more and more sophisticated transport technologies evolved, such as the aircraft and, most recently, rocket propulsion.

The gradual evolution of increasingly sophisticated means of transport is manifested by today's transport systems, which include air, surface, and water transport. Special industry needs have led to the development of transport modes that have rather limited applications, such as pipelines, cables, and belts. Within current societal needs and preferences, as well as the economic requirements of cost effectiveness, the various existing transport modes generally fulfill rather specific functions.

Although transport's potential to meet effectively numerous societal mobility needs improved continuously, it became evident that such effectiveness had its price. A number of transport technologies implied high energy consumption and required substantial capital inputs in production and operation. As a result, several transport modes became expensive to the user. This caused equity problems because charges required to cover operating costs were not affordable by all population groups, thus limiting their mobility and welfare. Many governments chose to subsidize transport, but quickly realized that the budget implications often caused serious distortions in their national economies.

Pollution caused by various transport modes gradually became another serious problem as world transport in most countries and the need to cope with rising volumes of commodity flows and person travel. In several regions of the world having high population and industry concentrations, such detrimental impacts on the environment have reached high levels. These effects of such damage yet are to be fully explored.

Finally, problems caused by dwindling world energy resources, particularly petroleum, have increasingly impeded transport services and operations. Most existing transport modes are critically dependent on petroleum derivatives for proper functioning. With unabated growth of demand for transport and a progressively limited supply of energy, the costs of providing transport have increased steadily. In particular, the disproportion of petroleum requirements and petroleum supply has caused serious inflationary problems to arise in many countries. Especially hard hit are countries with a partial or total dependence on an external petroleum supply, which have experienced growing deficits in their current accounts.

The transport sector's increasing inability to satisfy demand efficiently and equitably is a problem with which all nations have to cope in trying to advance economic and social progress. Energy-supply constraints, high capital and operating costs, often with excessive foreign-exchange components, and the seriousness of transport-related environmental pollution account in large part for this problem. But transport is and will continue to be an essential requirement for world development and human welfare. There is no other choice but to look for alternatives to present transport systems or to modify the technical and operational characteristics of related modes so that energy consumption and costs will be reduced and environmental impacts can be kept at a minimum. Obviously, the development of transport demand will have to be controlled.

New Words and Expressions

evolution [ˌi:və'lu:ʃən, ˌevə-]	*n*. 进展，发展，演变，进化
transport ['trænspɔ:t]	*n*. 运输，运输机
[træns'pɔ:t]	*vt*. 传送，运输
haul [hɔ:l]	*n*. 用力拖拉，拖，拉
	vi. 拖，拉
	vt. 拖拉，拖运
intercommunal [ˌintə'kɔmjunl]	*adj*. 社区之间的
transport demand	交通需求
aggression [ə'greʃən]	*n*. 进攻，侵略
criterion [krai'tiəriən]	*n*. (批评判断的)标准，准则，规范
substantial [səb'stænʃəl]	*adj*. 坚固的，实质的，真实的，充实的
transport modes	运输方式
operating costs	运营成本
environmental pollution	环境污染
subsidize ['sʌbsidaiz]	*v*. 资助，给…津贴
implication [ˌimpli'keiʃən]	*n*. 牵连，含意，暗示
detrimental [ˌdetri'mentl]	*adj*. 有害的
unabated [ˌʌnə'beitid]	*adj*. 不衰退的，不减弱的
derivative [di'rivətiv]	*adj*. 引出的，系出的
deficit ['defisit]	*n*. 赤字，不足额
energy-supply	能源供应

Notes

1. As tribal groups formed and gradually established their geographical identity, transport was increasingly needed to open up regions for development, to provide access to natural resources, to promote intercommunal trade, and to mobilize territorial defense.

随着种族部落的形成和地理界线的逐步确定，开发新区域、开采新资源、发展社区间的贸易以及捍卫领地，这些都日益需要交通的发展。

2. Again, transport provided the mobility required for such intertribal, international, and finally intercontinental cultural exchange and trade.

而且交通提供了诸如部落间、国际间乃至于洲际间便利的贸易和文化交流。

3. During all of this gradual development toward an organized human society, represented today through the international family of nations, transport as physical process of moving people and goods, thus promoting such development, continuously underwent technological and organizational changes.

在向有组织的人类社会的演变过程中，这种组织在今天是通过由各国组成的国际化大家

庭表现出来的，交通作为人与货物移动的物理过程，也促进了这种发展，不断地经历着技术与组织方面的改变。

4. There is no other choice but to look for alternatives to present transport systems or to modify the technical and operational characteristics of related modes so that energy consumption and costs will be reduced and environmental impacts can be kept at a minimum.

没有别的办法，只有寻找新的交通替代手段或改变相关模式的技术与运行特点，才可以减少能源消耗和造价，对环境的影响也可以保持到最低程度。

Exercises

I True or false.

1. The evolution of transport has been closely linked to the development of humankind throughout the earth's history.

2. Transport played a negligible role in establishing national integrity when the first nations came into being.

3. Nearly all of the transport modes are not so expensive that the operation costs were not affordable by all population.

4. Transport will not continue to be an essential requirement for world development and human welfare.

5. It is no use controlling the development of transport demand.

II Complete the following sentences.

1. The first and foremost criterion to be satisfied by transport was __________.

2. The gradual evolution of increasingly sophisticated means of transport is manifested by today's __________.

3. __________, __________ and __________, often with excessive foreign-exchange components, and the seriousness of transport-related environmental pollution account in large part for this problem.

III Answer the following questions.

1. What are the negative results mentioned in this paper caused by various transport modes?

2. How is the prospect of transport according to the last paragraph and what should we do?

Reading Material

Impact of Transport Improvements

Transport projects can have both direct and indirect effects. The former are localized, are directly related to the scheme in a simple causal fashion, and are readily identifiable. The latter are more tenuous. The causal processes are less obvious and must usually be identified by going beyond the boundaries of the transport scheme itself. There is usually a strong relationship between the size of a scheme and the incidence of such indirect effects.

Indirect impacts

Some transport schemes are specifically designed to encourage such impacts. The large regional development scheme, based on a new port with port-based industries, or feeder roads and penetration tracks in virgin territory, is a typical example. A major road improvement to encourage the relocation of industry, is another. In both cases the benefits of the schemes, and sometimes their costs, cannot be evaluated with reference to the transport impacts alone. Indeed, since some schemes are specifically designed to open up new areas presently lacking transport services, there may be no existing transport costs the scheme could reduce.

Consider the following example. A new deep-water port is proposed with the object of attracting new port-based industries to an area of relatively high unemployment. How should it be evaluated?

The first step is to ask whether a port is the best answer and then to establish different possible levels of service, such as the depth of water and complementary facilities provided, considering which industries might be attracted to the port at each level. For each firm or industry likely to be attracted to the new port the economic evaluation should ask: Where would this industry have gone otherwise, and what net benefit is it likely to bring to the port authority, the region, and the country as a whole? If industry is simply diverted from one part of the country to another, it may generate few, if any, net benefits. The gain in new port revenue may be offset by a loss of revenue elsewhere, and any benefits associated with new employment may similarly be offset by redundancies elsewhere. It is the overall balance that counts. The evaluation should thus compare the cost of the proposed scheme (including the cost of any complementary facilities) with:

①Net gain to shipping companies, if thought relevant (if a scheme reduces shipping costs, it is often appropriate to revise charges to recapture some of these benefits as increased port revenue).

②Net port revenue (gross revenues of the port, less any loss of revenue at other ports).

③Indirect reduction in ports costs (reduced costs of other ports no longer headling diverted).

④Net gain to the local economy (in an input-output sense; value of output less resource costs of all inputs).

The first two items would generally be classified as direct effects. The latter two are indirect, because they are not obvious part of the scheme being examined and can arise in a wide variety of transport schemes. For example, a runway extension at a small airport may reduce airline costs as its main benefit but may also encourage tourist travel or stimulate the growth of specialized high-value industries. Similarly, a major road improvement may divert traffic from the railways and cause some branch lines to close. This could lead to the relocation/closure of some industries and to the decline of rail-based communities. Since indirect effects can be important, they should therefore only be omitted when they are known to be nonexistent or unimportant.

Direct impacts

These generally fall into five categories: initial and recurrent costs, vehicle operating costs, savings in travel time, accident costs, and environmental and wider considerations.

This pattern is fairly typical of a wide range of freeway and expressway projects in the United Kingdom. Time savings are considered immensely important; other benefits, such as accident reduction, moderately important; and vehicle operating-cost savings relatively unimportant(The latter are very much more important when roads are upgraded from earth or gravel to bitumen, or from signalized streets to expressways).

Exercises

I True or false.

1. Direct effects are tenuous, indirect effects are localized.

2. Since indirect effects can be important, they should only be omitted when they are known to be unimportant or nonexistent.

3. 'Net gain to shipping companies' and 'net gain to the local economy' would be classified as direct effects.

4. If a scheme reduces shipping costs, it is often appropriate to revise charges to recapture some of these benefits as increased port revenue.

5. 'Indirect reduction in ports costs '&'net gain to the local economy' are not obvious and they can arise in a wide variety of transport schemes.

II Complete the following sentences.

1. Transport projects include __________ effects.

2. There is usually a __________ between the __________ of a scheme and the __________ of such indirect effects.

3. Some transport schemes are specially designed to __________.

4. Direct impacts generally fall into 5 categories: __________.

5. Gross revenues of the port subtracts any loss of revenue at other ports is __________.

参考译文

交通发展产生的影响

交通项目能够产生直接的和间接的两种影响。直接影响的范围是局部的,它与相应的方案之间存在着明显的因果关系,并且很容易得到确认。而间接影响则比较模糊,它与相应方案的因果关系不明显,通常需要超出交通方案本身来寻找确定依据。方案规模与其产生的间接影响的影响范围之间通常有着紧密的联系。

1. 间接影响

一些交通方案通过专门的设计来促进这种影响。一个典型的例子就是一项大规模区域开发计划,这个计划以建设具有港基工业的新港口为基础,或以在待开发地区建设支路和贯穿性道路为基础;另一个典型的例子则是通过主要道路的改善来促进工业重新布局。对于上述两种情况,交通方案所产生的利益(有时也考虑到成本)不能仅仅通过交通影响来评价。的确,有些方案是专门设计用来开发目前缺少交通服务设施的新地区的,所以这种方案不可能再降低现有的交通成本。

考虑下面一个例子,有人提出在失业率相对较高地区建造新深水港的建议,其主要目标是将新的港基产业吸引到该地区。那么应该如何评价它呢?

第一步是探讨建造港口是否是解决问题的最佳方法，然后讨论可能建立的不同服务的水平。例如，已知水深和提供的辅助设备，考虑每种档次的港口可能会吸引的工业种类。对有可能被新港口所吸引的不同的商行和工业都应该进行经济评价：不然这种产业还会转向哪里，它会给港口、地区乃至整个国家带来多少净效益？如果一个工业仅仅是在国内各地区间转换，那么它获得的净利润就会很少。新港口的收入可能被其他地方的亏损所抵消，同样的那些新的就业岗位所带来的效益很可能被其他的冗余所抵消。这里重要的是总体平衡。因此，经济评价应将备选方案的成本费用（包括那些辅助设备的费用）与下述几方面进行比较：

①航运公司净效益（如果方案削减了航运成本，通常被专门用来修正一些费用以挽回某些这方面的损失，并作为港口的增收）。

②港口净效益（港口的总收入减去其他港口损失）。

③港口成本间接缩减量（其他港口不再经营转移交通而减少的成本）。

④地方经济净收益（在投入产出方面，产出价值减去全部投入的资源成本）。

前两项通常被定义为直接影响，后两项为间接影响。因为后两项在这个被审查的项目中并不明显，它们同样也可以出现在广泛的、多样的各个交通方案中。例如，一个小型机场跑道的延长可以降低航空公司成本以提高其收益，而且还会增加旅行者的旅行或刺激高产值工业的增长。类似地，一个主要道路路况的改善可能从铁路上吸引交通量，导致一些分支线路的关闭。这可导致一些产业的调整甚至倒闭，同时使一些基于铁路的社区衰落。由于间接影响的重要性，所以只有在确定它们不存在和不重要时，才可以忽略。

2. 直接影响

直接影响通常分为5类：初始和周期成本、车辆运营成本、运行节约时间、事故成本、环境及其他因素。

这样的一种模式在英国的高速公路和快速路工程项目中得到十分广泛的应用。运行时间的节省极其重要，像交通事故的减少等其他效益，则次要一些，而车辆运营成本的节约相对来说并不重要（但在由土或砂砾道路升级为沥青道路时或从信号控制道路升级为快速路时后者是非常重要的）。

Unit 2

Text

AVCSS Contributes toward Reducing Congestion and Improving Traffic Safety

When the ITS program in the U.S. was first conceived by Mobility 2000 more than 10 years ago, it had four primary functional areas: advanced traffic management systems, advanced traveler information systems, commercial vehicle operations and advanced vehicle control systems. In the decade since then, the majority of the attention of the ITS community in general has been focused on ATMS and ATIS, while the definition of AVCS has been expanded to AVCSS with the addition of 'and Safety' to accommodate safety warning systems that are not actually control systems.

There is a tendency in many quarters to assume that the shape and resource allocations of the U.S. DoT ITS program reflect or maybe even determine the scope of all ITS activities within the U.S. This assumption is particularly misleading in the case of AVCSS, where the large majority of the activity occurs within the vehicle manufacturing and supplying industries and the most advanced thinking happens within the state DoTs rather than the U.S. DoT. The investments that industry has made in researching and developing AVCSS products far exceed the investments by the government.

AVCSS encompasses a remarkably wide range of user services and technologies. These are normally defined according to the categories contained in the U.S. National ITS Architecture (longitudinal collision avoidance, lateral collision avoidance, vision enhancement, safety readiness, pre-crash restraint deployment and automated vehicle operation). However, this does not even capture the breadth of possibilities that arise from varying levels of cooperation and automation within an individual user service.

Warning systems can provide audible, visible or haptic (touch) cues to alert the driver to potentially unsafe conditions, after which the driver needs to take corrective action to avoid the hazard. Forward collision warnings have been available on trucks for several years, primarily from Eaton-Vorad, and truck lane departure warning systems have been announced by Iteris and SistWare. Short-range warnings of parking hazards also have been available for passenger cars for several years.

Control assistance systems provide automatic control of a portion of the driving function to assist the driver by relieving workload (e.g., adaptive cruise control) or to enhance safety (e.g., collision avoidance braking). Adaptive cruise control has recently become available on a few high-end cars in the U.S.

(Mercedes S-class, Lexus LS-430 and soon the new Infiniti Q45), as well as on some trucks. It has been available on a wider range of vehicles and for some time in Japan and Europe.

Full automation systems provide completely automated driving, relieving the driver of responsibility for driving or making it possible for vehicles to operate without drivers. These have not yet been introduced in public road applications, but they are carrying millions of passengers every day in airport people movers and a variety of urban transit systems (Vancouver, Paris, London, Tokyo, Lyon and Lille). Automated, driverless vehicles also are moving goods every day in factories and some major ports, such as Rotterdam.

Degree of cooperation refers to the amount of information that is exchanged between vehicle and roadside devices and among separate vehicles in order to enhance safety and performance. Autonomous vehicles employ no cooperation, but derive all their information about the environment from their own on-board sensors. Although they can 'see' other vehicles, they cannot 'talk to', 'listen to' or even signal those other vehicles.

The U.S. DoT Intelligent Vehicle Initiative has focused almost all of its attention on the autonomous vehicle. IVI has sponsored one small project to explore the possibilities of cooperative warning systems in the form of 'sensor friendly vehicle and roadway systems'.

This project has considered concepts for both passive and active 'tagging' of vehicles and roadside objects so that they can be more clearly identifiable by automotive radars, as well as technologies such as modulation of infrared LED taillights for vehicle-vehicle communications and fluorescent paint striping on road surfaces to facilitate discrimination of lane position information. The basic concept behind this project is that a modest application of technology to 'target' vehicles and the roadway infrastructure can significantly enhance the performance and/or reduce the cost and complexity of the in-vehicle AVCSS sensing and warning systems.

For example, the CHAUFFEUR project in Europe uses a distinctive pattern of infrared lights on the back of a trailer as the 'target' for the following truck to follow to form an 'electronic tow-bar', and the two trucks also communicate with each other using a wireless link.

The states of California, Minnesota and Virginia have joined together in the 'IVI Infrastructure Consortium' to expand the IVI into infrastructure-cooperative systems. Their initial focus is on intersection collision warning, which is impractical for autonomous vehicle systems and almost certainly requires infrastructure-based sensing and communication systems. Substantial attention also has been given to infrastructure cooperation with AVCSS in the 'Smartway' project of Japan Ministry of Construction. They demonstrated their initial concepts and devices in late November 2000 as part of Demo 2000.

New Words and Expressions

AVCS　先进的车辆控制系统(Advanced Vehicle Control Systems)

congestion [kən'dʒestʃən]　n. 拥塞,充血

ITS　智能交通系统(Intelligent Transport Systems)

vehicle ['vi:ikl]　n. 交通工具,车辆

conceive [kən'si:v]	*vt*. 构思,以为,持有
ATMS	先进的交通管理系统(Advanced Traffic Management Systems)
ATIS	先进的交通信息系统(Advanced Traffic Information Systems)
DoT	*abbr*. (美国)运输部 (Department of Transport)
encompass [in'kʌmpəs]	*v*. 包围,环绕,包含或包括某事物
longitudinal [ˌlɔndʒi'tju:dinl]	*adj*. 经度的,纵向的
lateral ['lætərəl]	*adj*. 横(向)的,侧面的
readiness ['redinis]	*n*. 准备就绪
haptic ['hæptik]	*adj*. 触觉的
cue [kju:]	*n*. 暗示,提示
assistance [ə'sistəns]	*n*. 协助, 援助
workload ['wə:kləud]	*n*. 工作量
cruise [kru:z]	*vi*. 巡游, 巡航 *n*.巡游, 巡航
autonomous [ɔ:'tɔnəməs]	*adj*. 自治的
sensor ['sensə]	*n*. 传感器
signal ['signl]	*n*. 信号 *adj*.信号的 *v*. 发信号
initiative [i'niʃiətiv]	*n*. 起始, 初步, 主动 *adj*.起始的, 初步的
sponsor ['spɔnsə]	*vt*.发起, 主办 *v*.赞助
passive ['pæsiv]	*adj*. 被动的
modulation [ˌmɔdju'leiʃən]	*n*. 调制,调节
infrared ['infrə'red]	*n*. 红外线
LED(light emitting diode)	*abbr*. 发光二极管
taillight ['teilˌlait]	*n*. 尾灯
distinctive [dis'tiŋktiv]	*adj*. 与众不同的,有特色的
fluorescent [ˌfluə'resənt]	*adj*. 荧光的,发光的
discrimination [disˌkrimi'neiʃən]	*n*. 辨别, 区别,识别力,辨别力,歧视
modest ['mɔdist]	*adj*. 谦虚的,谦让的,适度的
significantly	*adv*. 意味深长地,值得注目地
trailer ['treilə]	*n*. 追踪者,拖车
tow-bar	*n*. (拖拉宿营车的)拖曳杆
infrastructure ['infrə'strʌktʃə]	*n*.(组成企业或组织)基础结构,基础设施
consortium [kən'sɔ:tjəm]	*n*. 社团,协会
intersection [ˌintə(:)'sekʃən]	*n*. [数]十字路口,交叉点
collision [kə'liʒən]	*n*. 碰撞,冲突

Notes

1. This assumption is particularly misleading in the case of AVCSS, where the large majority of the activity occurs within the vehicle manufacturing and supplying industries and the most advanced thinking happens within the state DoTs rathing than the U.S. DoT.

该假设在先进的车辆控制和安全系统中特别容易被误解，因为车辆控制与安全系统中的大多数行动都在车辆制造业和供应业中完成，大部分先进的设计思想都产生于各州的运输部而并非美国国家运输部。

2. Warning systems can provide audible, visible or haptic (touch) cues to alert the driver to potentially unsafe conditions, after which the driver needs to take corrective action to avoid the hazard.

预警系统可以提供听觉上、视觉上或触觉上的提示，从而使驾驶员警觉到潜在的不安全因素，然后驾驶员就要采取纠正措施以避免危险的发生。

3. These have not yet been introduced in public road applications, but they are carrying millions of passengers every day in airport people movers and a variety of urban transit systems (Vancouver, Paris, London, Tokyo, Lyon and Lille).

虽然它们(完全自动驾驶系统)还没有普及，但它们每天在机场和多种城市运输系统中运送着数以百万计的客流量(如在温哥华、巴黎、伦敦、里昂和里尔)。

4. This project has considered concepts for both passive and active ‘tagging’ of vehicles and roadside objects so that they can be more clearly identifiable by automotive radars, as well as technologies such as modulation of infrared LED taillights for vehicle-vehicle communications and fluorescent paint striping on road surfaces to facilitate discrimination of lane position information.

这项计划考虑了车辆和路边物体的主动与被动“跟驰”的概念，所以它们可以更加清楚地被车载雷达所识别，也采用了诸如下述技术：调制红外液晶显示尾灯以便于车辆间相互提醒；在道路表面施划荧光涂料的标线以便于辨别车道位置信息。

Exercises

I True or false.

1. The majority of the attention of the ITS community in general has been focused on ATMS and AVCS since 10 years ago.

2. AVCS can provide audible, visible or haptic (touch) cues to alert the driver to potentially unsafe conditions, after which the driver needs to take corrective action to avoid the hazard.

3. Short-range warnings of parking hazards also have been available for passenger cars for several years.

4. Adaptive cruise control has been available on a wider range of vehicles and for some time in the U.S.

5. Although autonomous vehicles can ‘see’ other vehicles, they cannot ‘talk to’, ‘listen to’ or even signal those other vehicles.

II Answer the following questions.

1. What assumption is particularly misleading in the case of AVCSS?

2. How can the definition of AVCS be expanded to AVCSS?

3. Which systems provide automatic control of a portion of the driving function to assist the driver by relieving workload or to enhance safety?

4. What can full automation systems provide?

5. How many states have jointed together in the 'IVI Infrastructure Consortium' in the U.S.?

Reading Material

ITS Offers a New Approach

A broad range of diverse technologies, known collectively as intelligent transportation systems (ITS), hold the answer to many of our transportation problems. ITS is comprised of a number of technologies, including information processing, communications, control, and electronics. Joining these technologies to our transportation system will save lives, save time, and save money.

The future of ITS is promising. Yet, ITS itself is anything but futuristic. Already, real systems, products and services are at work throughout the country. Still, the wide-scale development and deployment of these technologies represent a true revolution in the way we, as a nation, think about transportation. While many aspects of our lives have been made more pleasant and productive through the use of advanced technologies, we have somehow been content to endure a transportation system whose primary controlling technology is the four-way traffic signal-a technology that has changed little since it was first invented. It has taken transportation a long time to catch on, but now the industry is sprinting to catch up.

Fulfilling the need for a national system that is both economically sound and environmentally efficient requires a new way of looking at-and solving-our transportation problems. The decades-old panacea of simply pouring more and more concrete neither solves our transportation problems, nor meets Congress broad vision of an efficient transportation system.

Traffic accidents and congestion take a heavy toll in lives, lost productivity, and wasted energy. ITS enables people and goods to move more safely and efficiently through a state-of-the-art, intermodal transportation system.

The revolutionary development of advanced systems demands an equally revolutionary plan for deployment. The use of ITS in Japan, Europe, and Australia has been greatly accelerated through mutual cooperation of the public and private sectors. Similar cooperation is required in the United States. Yet, unlike the state-mandated cooperation found in many countries, the United States requires a voluntary commitment to cooperation that preserves the benefits of the free enterprise system while ensuring that the broad goals established by Congress are met. The model for this type of cooperation is the public/private partnership-a voluntary association of public and private interests committed to the successful development and deployment of ITS in the United States. It is the mandate of the Intelligent Transportation Society of America (ITS America) to coordinate that cooperative effort.

As mandated by Congress, ITS America is the only national public/private organization established