



Third BESTUFS Workshop,

*“Optimised city distribution vehicles
as demanded by transport operators and cities”*

17th January 2001, workshop at the museo dell'automobile in Turin
and

18th January 2001, technical visit to Centro Ricerche FIAT in Orbassano

Participants of the workshop on the 17th

Roberto Palacin,	ARRC
Stephane Hopensztand,	Carrier Transicold Europe
Martin Fischer,	City of Aalborg
Rainer Storch,	City of Cologne
Carla Gerbaudi,	City of Genova
Vito. M. Contursi,	City of Genova
Viviana Procopio,	City of Genova
Ton Vermie,	City of Rotterdam / ELCIDIS project
Cristina Piai,	City of Torino
Giovanni Ruberti,	CSST
Peter Sonnabend,	Deutsche Post
Reinhard Dorner,	ECONSULT
Mark Major,	European Commission, DG Transport and Energy
Dario Destefanis,	IVECO
Dario Salvati,	IVECO
Guiliano Lamoni,	IVECO
Marco Monticelli,	IVECO
Chris Christianson	IVECO
Nicolai Bühl,	IVECO
Pierluigi Zanframundo,	IVECO
Michele Latorre,	Journalist (free lance)
Robert Domina,	Journalist (free lance)
Toby Clark,	Journalist for the 'Commercial motor'
Tkiavi Altieri,	Journalist for the 'IL Mondo dei Trasporti'
Ludwig Cremer,	Journalist for the 'Trans aktuell'
Alfredo Escolar,	Journalist for the 'Transport mundial'
Raquel Arias Vega,	Journalist for the 'Transporte Professional'
Luca Barassi,	Journalist for the 'Trasportare oggi in Europa'
Mauro Zou,	Journalist for the 'Vie e trasporti'
Martin Quispel,	NEA Transport research and training
Carlo Parsi	PGA
Henry Britton,	POLIS
Guillermo Montero,	PROINCA
Elisabeth Sage	PSA Peugeot Citroën
Dieter Wild,	PTV
Marcel Huschebeck,	PTV
Claudia Glücker	RAPP
Martin Ruesch,	RAPP
Simon Huiberts,	Royal Dutch Transport Association
Claudia Burlando	University of Genova
Prof. G. Giannopoulos	University of Tessaloniki
Vincent Sartre	Volvo Global Truck (Renault)



Agenda

Chairman: Dr. Dieter Wild, PTV AG

First Day: 17th January 2001, Museo dell'automobile, Turin

1. Introduction

- a) Welcome and introduction by Dieter Wild, PTV AG
Structure and aims of the workshop
- b) Short self introduction by each participant

2. Transport operators and cities: Demanding the same vehicle type?

- a) City distribution vehicles in Switzerland (Part of COST 321 results), by Martin Ruesch, RAPP AG
- b) City distribution vehicles in Rotterdam and new developments within the ELCIDIS Project, by Ton Vermie, Municipality of Rotterdam
- c) Advanced vehicle technologies in goods distribution, Simon J.C. Huiberts, Royal Dutch Transport Association
- d) Vehicle related constraints, problems and tendencies within the urban freight distribution, Peter Sonnabend, Deutsche Post AG
- e) Urban vehicle design requirements, Jim York, Exel (UK)

3. Vehicle manufacturers: Prepared for the changing demands of the cities of tomorrow?

- a) New developments at IVECO, by Pierluigi Zanframundo, Light Range Business Unit, IVECO
- b) New developments at IVECO, by Dario Salvati, Medium Range Business Unit, IVECO
- c) New developments at PSA Peugeot Citroën, by Elisabeth Sage, PSA Peugeot Citroën

4. Open discussion

Open discussion of promising solutions and identification of good practices, major barriers and possible supporting initiatives. All workshop participants (including also participants without presentation) are asked to prepare a very short statement on their relation, experiences and prospect with regard to city distribution vehicles. E.g. to express the favouring of special solutions, to highlight additional typical problems, to recommend policies or to address open questions which need to be answered, etc.

Second Day: 18th January 2001, Centro Ricerche FIAT, Orbassano

5. Guided technical visit at the "Centro Ricerche FIAT" at Orbassano

Presentation and demonstration of research and development activities at FIAT and IVECO



Ad 1 'Introduction'

The chairman, Mr. Wild, opens the workshop that is supported by IVECO and welcomes the participants (42 people are present). He explains the focus of this workshop "optimised city distribution vehicles as demanded by transport operators and cities".

In BESTUFS the distribution vehicles are considered to be very important. There is a high amount of goods that move in and out the city. On the one hand this flow of goods keeps the city vital. However, distribution vehicles show also negative effects on the environment. Congestion, emission, noise, vibrations and travel times in the city area should therefore be reduced. Generally, a demand side consisting of shippers and transport operators and a supply side consisting of the vehicle manufacturers can be distinguished. Cities have a particular vital interest in city transport processes. This workshop is addressing motor driven city distribution vans or trucks and not the so called "alternative transport means as bicycles or freight trams". Therefore, the workshop is looking at the possibilities and limits for an optimisation of these vehicles in particular by improving the knowledge on "where" optimisation potentials for all sides are possible and "where" BESTUFS should put its focus in.

Mr. Wild explains the structure of the workshop. After presentations from the demand side (cities and operators) the supply side (truck manufacturers) will give presentations. Then a discussion is planned in order to get a clear vision on what aspects or issues more attention should be paid and more effort is required. Mr. Wild mentions that Mr. York (EXEL, UK) apologised not being able to attend the workshop but that the script of his presentation will be provided during the workshop.

After this introduction by Mr. Wild, the participants introduce themselves and explain their interest in BESTUFS.

Ad 2 'Transport operators and cities: Demanding the same vehicle type?'

a) City distribution vehicles in Switzerland (Part of COST 321 results), by Martin Ruesch, RAPP AG [Please see annex 1 for this presentation].

Mr. Ruesch from RAPP AG presents the results of the study on "city distribution vehicles in Switzerland" being part of the COST 321 project (1994-1998). The basis for his study results is today's vehicle park in Swiss cities. First he presents key figures of the Swiss vehicles park. He states that the increase of vehicles is a result of a growing number of consignments, the demand for shorter lead times and regulations on trucks. Furthermore, the characteristics and potentials of an urban lorry are presented. He gives some examples of urban vehicles of different weight classes. Secondly, he provides detailed information about the economical and ecological effects. He addresses the barriers that exist for using cleaner distribution vehicles and he presents the suitable framework conditions and supporting measures for common use of clean technologies. Finally, he presents conclusions and an outlook to the future of urban goods transport. In particular he stresses that the right urban lorry can provide a contribution to improve the quality of the environment and the efficiency of the transportation. An integrated approach should be used and the factors reliability and practicability are crucial for



success. At this moment only in some companies the extra costs for alternative drives can be compensated. Supporting measures and incentives are needed at the beginning of implementation. The outlook consists of fuel cell technology and integrative equipment suitable for multi- or intermodal transport chains. Furthermore he explains that technology transfer needs time to gain sufficient user acceptance.

Questions/discussion

Mr. Wild remarks that it would be interesting to see whether the conclusions made in 1998 are still valid at present (2001). Mr. Lamoni remarks that he missed the methane engines in the presentation and he says that this type of vehicles do offer the required solutions. Mr. Ruesch says that the required infrastructure for service and fuel providence will be the main barrier for using these engines. Mr. Britton asks if the vehicle characteristics are only valid for Switzerland or also for other European countries. Mr. Ruesch answers that in Switzerland there is a weight limit of 28 tons but the share of small vehicles compared to the share of big vehicles is comparable (80-85% against 20-15% for the whole of Europe). Mr. Domina remarks that the city of Bern shows a different structure of the vehicle park than the other Swiss cities. Mr. Ruesch explains that this difference is caused by the presence of the Swiss army in that region. Mr. Monticelli asks whether a cost calculation has been developed during the study and what the conclusions were. Mr. Ruesch explains that indeed a general cost calculation is made. The conclusions were that at urban vehicles the share of investment costs in the total cost is 20-25%, at long distance transport the investment costs can run up to 50%. Mr. Lamoni remarks that within 5 years only about 100 up to 1,000 vehicles will be operational in European cities with an engine based on fuel cell technology. Mr. Cremer remarks that the discussion about fuel cells is interesting. He says that it is the question whether to invest in infrastructure, because now there is a lack of infrastructure. He remarks that CNG is perhaps a niche option. Mr. Lamoni says that he foresees different vehicles in the future for different purposes and that there will be a co-existence of use of different (clean) fuels. Different solutions can exist in parallel. All can be considered as sustainable solutions and investments will eventually be re-earned. The differing solutions will probably grow up together and perhaps after a certain period a winner is found. Mr. Ruesch reacts that for creating a secondary fuel infrastructure a market share of 20-25% is needed for (commercial) viability. Mr. Monticelli says that currently engineers at IVECO are estimating that this technology will be economically feasible in 10 years. The CNG solution is however now available and can be assessed as an intermediate solution.

b) City distribution vehicles in Rotterdam and new developments within the ELCIDIS Project, by Ton Vermie, Municipality of Rotterdam

[Please see annex 2 for the presentation].

Mr. Vermie gives the second presentation. He is the project co-ordinator of the ELCIDIS project and a representative from the City of Rotterdam (department of public works and environmental policy). Mr. Vermie presents the ELCIDIS project. 6 cities are involved in ELCIDIS and all these cities are highly interested in electric and hybrid vehicles. There are however some problems with the supply of electric vehicles in Rotterdam and Stockholm. The vehicles still aren't delivered and this results into a disturbance of the project planning of ELCIDIS. As the main bottleneck the batteries have been



identified. Innovative lightweight batteries are required to provide a vehicle with a competing payload compared to a regular vehicle. The smaller electric vehicles (Citroën Berlingo, Audi Duo, Citroën Saxo) are functioning properly. However, bigger vehicles are required and these are just available from one manufacturer. The conclusion of the presentation is that some of the cities have positive experiences and that there is a broad interest from other parties. A positive spin-off effect has been noticed at car- and truck manufactures side not directly involved in the project (tendency to higher number of production series). The availability of bigger electric vehicles (e.g. 3.5 ton class) is however the main problem at this moment. More information about ELCIDIS can be found at www.elcidis.org.

Questions/remarks

Mr. Major asks about the cause for the problems with the availability of the electric vehicles. Mr. Vermie answers that the problems are more production problems than technological problems. The technology is available but the production capacity at the manufacturers is probably too small. It takes them half a year work to get an electric vehicle running. Mrs. Sage says that it is difficult to develop products that react quickly on demand. At this moment there is an industrial problem with the batteries for bigger vehicles (>2 ton). The reason is that these vehicles require more power from the batteries. These kinds of batteries are not yet developed for the market. Therefore the problem is partly technical if considering the batteries for electric (heavier) vehicles and this is the reason why Citroën doesn't have an electric offer for bigger vehicles than the Berlingo. Mr. Storch asks what distances can be driven with the electric vehicles. Mr. Vermie answers that in the planning a maximum distance of 80 Km is taken into account. Mr. Cremer says that in Bremen Mercedes Benz vehicles are operating using "ZEBRA" batteries and that these vehicles can run from 200 Km up to 400 Km before having to recharge. Mr. Domina asks about the payload of the electric Berlingo. Mr. Vermie answers that the electric Berlingo has the same payload compared to the Berlingo with a combustion engine. Mr. Ruberti asks if evaluations have been done on electric vehicles and comparisons are available with regular vehicles. Mr. Vermie answers that the evaluation still has to be done. Only the city of Stavanger has some experience now. Finally Mr. Vermie remarks that the success of the electric vehicle strongly depends on the service that is fulfilled.

c) Advanced vehicle technologies in goods distribution, Simon J.C. Huiberts, Royal Dutch Transport Association

[Please see annex 3 for this presentation].

Mr. Huiberts gives a presentation about distribution vehicles from a technical point of view. He starts with presenting the effects of the changing customer demands. The effects are: smaller amounts, more different articles, more custom made products, longer distances (global markets), faster deliveries, higher delivery frequencies and a more reliable ETA (estimated time of arrival). Next, Mr. Huiberts outlines the demands from the transport operators. These are better balanced transports, lower driving costs, lower (un)loading times, reliable roads and an attractive driver job. The demand from the government is mainly to get a low environmental impact (noise, road space, emission, and climate effects). Next the new design goals are presented. These are: more compact vehicles, easy and safe to drive, low noise while driving and (un)loading, low emissions, fast (un)loading process, driver convenience and a multifunctional vehicle. Furthermore, he shows examples of innovative



vehicles according different dimension classes. Noise is presently an environmental issue at urban distribution in the Netherlands with high priority. Several methods to decrease the noise levels are shown (soundless reverse detection, more silent tailboard, more silent load floor, silent refrigerating systems and a roll-down shutter). Furthermore, attention is paid on the way to get to Euro-4 norm. Finally, some innovations in the loading/unloading processes are shown (integrated box systems).

Questions / remarks

Mr. Wild thanks Mr. Huiberts for the presentation and remarks that this presentation widened the scope of the workshop. Not only the situation of driving vehicles is important but also other processes in urban distribution. Mr. Cremer asks whether noise regulations are already implemented in the Netherlands. Mr. Huiberts answers that there are stringent noise limitations planned. From 1-12-2001 the regulation is: during the evening (between 19 and 23 hours) max. 65dB(A) and during the night (between 23 and 07 hours) max. 60dB(A). However, the required silent trucks are not yet available on the market. Furthermore it is expected that the noise regulations will become even stronger in the future. Mr. Palacin asks whether there have been evaluations about the innovative vehicles. Mr. Huiberts answers that there have been evaluation studies but that he doesn't have the results available. Mrs. Sage asks how the noise levels have been reduced. Mr. Huiberts answers that mainly on the body elements of the vehicle has been worked on, less on the noise of the engine. Prof. Giannopoulos asks if there is an actual application yet for tags for loading and unloading. Mr. Huiberts answers that there is not yet an application in freight transport, but there are applications running in the public transport.

d) Vehicle related constraints, problems and tendencies within the urban freight distribution, Peter Sonnabend, Deutsche Post AG

[Please see annex 4 for this presentation].

Mr. Sonnabend starts with an outline of the Deutsche Post AG. He presents the transport operations in urban areas: (1) the transfer of bulk loads between regional sorting centres and local depots respectively for large customers and (2) the pick-up and delivery processes of small loads. In the following he distinguishes product, regulatory and operational constraints for distribution vehicles. Product constraints such as weight and volume differ by product. It is to recognise that

- non-conveyable parcels grow in size and relative numbers,
- E-business induces new trends and constraints for logistics,
- demand for online status information increase,
- customer demand for late pick-up and early delivery at fixed times increase.

The regulatory constraints are outlined (driver licences, tour recorders, documents, time-windows and curfews). In the following operational constraints are described. Urban areas are often not well accessible for large vehicles, due to narrow streets and a lack of parking places. In addition congestion influences the operation negatively. Important to keep in mind is the fact that the relative costs of larger vehicles are lower than for smaller vehicles if they are used at full payload. The Deutsche Post AG conducted pilot trials with natural gas and electric drives. The performance and emission characteristics are satisfactory for the pilots. However, there are no direct economic advantages and there are problems due to a lack of product maturity and support by manufacturers. Key strategic



problem is lack of tangible regulatory support, i.e. operational and/or financial benefit, for clean fuels to offset economic disadvantages against conventional fuels under prevailing market conditions. Mr. Sonnabend remarks that providing subsidies is not a sustainable way to stimulate the use of clean vehicles because subsidies will be reduced or stopped after a certain period. There should be thought about better access (longer time window /higher weights) of the city and dedicated parking places for clean vehicles. Mr. Sonnabend continues describing trends for distribution vehicles. There are conflicting requirements for urban delivery vehicles. Access constraints favour smaller vehicles, traffic constraints favour smaller vehicles, e-business favours smaller vehicles, legislation favours smaller vehicles but on the other side, item size and weight favours larger vehicles and also cost constraints favour larger vehicles. There is the trend towards increased payload capacity of medium-sized vehicles with modified superstructure on standard frame (vehicle up to 3.5 tons). There is a potential to use small containers for major customers. Furthermore, there will be an integration of mobile communications, information processing, and positioning devices as standard features for on-board equipment. Use of clean fuels is subject to adequate economic framework for operations. The impact of new urban logistics concepts on vehicle design is yet to be determined. The future of fleet procurements will be outsourcing versus the partner store concept. Dedicated urban delivery vehicles (purpose build design) are potentially useful but only if they are derived from versatile standard vehicles.

e) Urban vehicle design requirements, Jim York, Exel (UK)

[Please see annex 5a for the planned presentation and annex 5b for the script of the planned presentation]. The presentation was cancelled due to absence of Mr. York.

Ad 3 'Vehicle manufacturers: Prepared for the changing demands of the cities of tomorrow?

a) New developments at IVECO, by Pierluigi Zanframundo, Light Range Business Unit, IVECO
[Please see annex 6 for this presentation].

First the results of an urban distribution survey are presented. The interviewed companies have a vehicle park of 118,700 commercial vehicles (CV), of which 91,500 are LCV (<6,5t GVW). 48% of the vehicle park circulates in the city centres, 32% in the periphery and 20% on the countryside. The traffic in the periphery will grow considerably in the future and there is a shift from the city centres and the countryside towards the urban periphery. The geographical restructuring is still strong in Southern Europe and slowing down in Northern Europe, this is mainly caused by the movement of commerce, industry and people and the increasing importance of e-commerce and home delivery. Considering the vehicles, most of the LCV, which circulate in the city areas distributing goods have a GVW (gross vehicle weight) of 3.5t. Also very important is the segment up to 2.8t and over 6.5t. The trend shows a strong impact of the "new" driving license legislation in Germany and UK: thus vehicles with 3.51-6.5 GVW will be replaced by vehicles with 3.5t. In whole Europe the concentration process on the 3.5t segment will continue. Today distributors prefer vans to work in the city centres, because of their manoeuvrability and robustness. The future trend is however in favour of chassis cab vehicles because of their customised bodies, bigger cargo volumes and more deliveries in the periphery. Van buyers will require bigger vehicles in the future. The delivery frequency and the number of deliveries



per tour will increase strongly, whereas the dimension of the “parcels” will grow only slowly. Goods weight will decrease, as well as the tour length. Concerning e-commerce and delivery service, the interviewees expect a strong growth of home delivery, delivery to third places (e.g. convenient places like collection terminals) and delivery to the workplace. This will lead growing importance of reverse logistics, evening/ weekend delivery, delivery- speed and punctuality. The success of B2C businesses depends strongly on the logistic providers that should perform at low cost and high quality. Considering low emission vehicles, in Northern Europe 29% of the companies use low emission vehicles (CNG, LPG or electric propulsion). 30% of European companies consider trying low emission vehicles. However, there is still a long way to convince the clients of the viability of these vehicles. Next the IVECO Daily, the IVECO Daily Vendor and the IVECO Daily Info are presented. The Vendor has automatic sliding doors for comfortable, easy and fast loading/ unloading operations. The Daily Info contains solutions like continuous transmission of M&R Data, GPS location system and GSM telecommunication technology, active navigation system and voice recognition systems. Considering the environment, IVECO CNG vehicles will be available at the end of 2001.

b) *New developments at IVECO, by Dario Salvati, Medium Range Business Unit, IVECO*
[Please see annex 7 for this presentation].

The Medium Range Business Unit of IVECO is responsible for vehicle sales from 6 to 16 tonnes (IVECO EuroCargo). EuroCargo has almost 25% market share in Western and Central Europe and is the market leader in many countries. Because society is rapidly changing and technology is facilitating behavioural change, the question is ‘what are the implications for transport operators in this environment?’. Traffic congestion is getting worse and damages industry and environment. On company level parking restrictions and local driving bans cause problems for drivers and are a reason for increasing transport costs. The manufacturers are committed to “softer” styling in order to increase the acceptability of trucks and there has already been a dramatic progress in reducing the drive-by noise levels. Also regarding vehicle emissions the automotive industry achieved good progress in emissions reduction. Also the safety record of trucks hasn’t the image it deserves.

At vehicles of 7.5 tons, the labour costs are equal to the cost of the fuel and these two are the highest cost components. Therefore, the driver productivity has further potentials for improvement. The driver fulfils shortly 4 jobs: driver, (un)loader, ambassador for the delivery company and manager of on-board telematics. In multi-drop applications the driver may be unloading 3000 Kilograms without mechanical handling assistance. All together this has significant health and safety implications. Furthermore, the environmental issues are not just a question of gaseous emissions. The subject of noise has to be respected and also the subject of the visual appearance of trucks in the city (apart from the image of an “aggressive intruder”). Next, Mr. Salvati presents four possible scenarios for urban distribution. The first scenario means that the transport industry continues to manage the problems as and when they occur, scenario two leaves the problem with the operator to manage as best as he can. The third scenario requires a much more innovative engineering approach from the manufacturers as well as a much closer working relationship between the manufacturer and the operator. Scenario four requires a strategic transport plan, huge public and private investment and major social change. The fourth is the most favourable one but it is also the most difficult one. Because of the growing importance of the e-commerce, there will be an increase of the multi-drop distribution. For this purpose IVECO designed



an optimised distribution vehicle, the Eurotran. This vehicle shows advantages on several aspects e.g. lower transport costs, higher productivity, higher flexibility, more safety, less driver effort and increased acceptability by the public.

Questions/remarks

Mr. Wild remarks that the driver issues are interesting. Furthermore, he asks if reaching the Euro-4 norm gives problems for truck manufacturers. Mr. Salvati answers that it is possible to reach the Euro-4 norm but that it is a more expensive operation though. Prof. Giannopolous asks about the ability to drive in narrow roads (e.g. inner cities). Mr. Salvati answers that the vehicle has a standard width of two metres and therefore the vehicle can access narrow streets also. Only in some cases solutions have to be found together with the stakeholders. Mr. Domina asks about the rate of new materials that are used in the EUROTRAN. Mr. Christianson answers that the EUROTRAN is not designed to be innovative from a material point of view because of the danger that the vehicle would become too expensive. Therefore, standard materials are used but the EUROTRAN has 20-40% increased productivity and the target price will be the same as today's EUROCARGO. Mr. Christianson states that up to vehicles of 12 tons the following line is valid 'the bigger the vehicle, the less the congestion and emission'. The ECOTRAN also fits the demands coming from local warehousing and because of the side loading possibility less area is needed for (un)loading.

c) New developments at PSA Peugeot Citroen, by Elisabeth Sage, PSA Peugeot Citroen [Please see annex 8 for this presentation].

The presentation deals with light commercial vehicles up to 3.5 tons. In France, urban goods transport concerns (non exclusive uses) more than half light commercial vehicles between 1.5 and 2.5 tons. On average, 50% of all deliveries in cities are realised with light commercial vehicles. Small LCV are mainly used for single trips, vans are mainly used in tours. At the question: 'which commercial vehicle for urban goods transport?' there is no direct answer. There are three important points concerning this question: (1) size, (2) links between logistics and vehicles and (3) consequences of commercial vehicle traffic on environment. In general it can be stated that there is no 'ideal' vehicle for urban goods transport due to several reasons. At first because of strong heterogeneity in urban goods transport leading to strong heterogeneity in the needed vehicle equipment. Furthermore, there are various and non exclusive uses for light commercial vehicles. Therefore there is a need for a diversified range of vehicles. Also, Mrs. Sage remarks that vehicle issues are a consequence of the logistic organisation and not the reverse. Goods logistics and transport are optimised, therefore the use of bigger vehicles instead of LCV cannot be envisaged without a whole logistic reorganisation. Furthermore, goods deliveries are more and more part of a service rather than just of delivering goods. Also studies show that goods delivery needs are strongly related to the nature of each economic activity. Looking at the measures that can be done there is not much room for manoeuvres available. Such measures can apply to the location of activities rather than on the number of trips, what should be considered is the location of logistic platforms near cities. For the acceptability of urban goods transport the impact on the environment should be limited. Regarding pollution, cleaner vehicles (HDI) should be used and 'clean' vehicles possibly in specific logistic organisations (for example Elcidis in la Rochelle (France)). Regarding the noise, there is a significant progress (levels divided by two).



However, renewal of the vehicle fleet, while commercial vehicles are much older than passenger cars, is required to benefit from the innovations. Concluding, goods transport is crucial to maintain the dynamism of cities. It is important to reduce its environmental impacts without damaging its added value to urban life. Prior to any concrete policy measures, it is necessary to get better knowledge on goods transport and the use of commercial vehicle in cities. BESTUFS can help to answer these issues by sharing data on goods transport in European cities and sharing best practices and results of experiments in Europe.

Questions/remarks

The success of innovative urban distribution vehicles mainly depends on the economical aspect. The transport operators are the decision-makers and they will determine if they are going to make use of clean vehicles to fulfil the logistic operation. The price of clean vehicles should therefore be competitive. However at a low scale production of “clean” vehicles it is almost impossible to compete with regular vehicles produced on a large scale. A serial production is required to get a competitive product. Therefore, a big demand is required. It seems that at present manufacturers are waiting for operators to buy before they enlarge the production and on the other side, operators are waiting for the availability of a competitive product before they buy. This ‘dead-lock’ situation has to be broken by means of close co-operation between the three main important actors together. The administrations should play an important role to stimulate the use of clean vehicles by means of creating advantages for clean vehicles compared to regular vehicles (fewer regulations or subsidies to start the ‘snowball-effect’). The operators have to assure the manufacturers about the intention to use clean vehicles once they will be competitive. Manufactures should get more certainty about the demand in the nearby future by means of solid agreements with customers. This results in less risky business to start up the high scale production of clean vehicles.

Ad 4 ‘ Open discussion’

Mr. Wild remarks that there seems to be no real conflicts in this workshop between the demand and supply side of vehicles. Concerning clean vehicles it can be stated that truck manufacturers do make effort, therefore TN BESTUFS would be grateful to be kept informed on the tests and experiences. Concerning ‘sizes’ this topic is closely linked to the theme ‘E-logistics’ and this theme will certainly be addressed within one of the next workshops. Also the theme ‘telematics’ will be addressed on a later stage. Mr. Wild proposes to make a ‘ round along the table’ in order to receive the opinion from the participants about this workshop and to give all of the participants the opportunity to provide (general) comments and or recommendations for TN BESTUFS.

Mr Clark starts the round along the table. He would like to see more evidence of solutions/strategies that are working in practise. Furthermore, he is interested in the trends that influence urban logistics.

Mr. Domina stresses the theme ‘telematics’ and would like to see attention paid to this theme.

Mr. Zanframundo states that vehicle manufacturers have to reply on business and society requirements as well as on other constraints in short terms (5 years). Therefore, first certainty has to



be created to make sure that the (future) market requirements fits to the vehicles that were designed five years ago. In the past the life cycle was longer (20-25 years). The next life cycle will be shorter (about 15 years). The current megatrends are conflicting to those of some years ago. Volume is now becoming of bigger importance. In order to know what the optimum design can be for the future one has to make a common view first on how to prepare the future.

Mrs. Sage refers to the remark of Mr. Clark. She says that the success strongly depends on the commitment from all sides. She recommends that BESTUFS should focus on these aspects. Furthermore, she wants to state that a continuous evolution of vehicle design is needed. There is no need for revolutionary changes. BESTUFS should focus on the changes and consequences for manufacturers.

Ms. Glücker recommends that more attention should be paid to the Euro-norms of vehicles, because the emissions are giving problems in the cities.

Mr. Ruesch remarks that four different solutions of clean fuels won't be feasible because it is economically not possible to build the required infrastructure. Attention is needed on how to lower the barriers for implementation of environmental friendly vehicles. Furthermore, he recommends that there should be attention paid to multi-modal transport chains and the integration with urban logistics.

Mr. Bühl remarks that the costs of innovations have to be taken into account and that this aspect shouldn't be forgotten.

Mr. Fisher indicates that the traffic in the city increases. The city of Aalborg is trying to give a good example by purchasing electric vehicles. However, private companies won't buy electric vehicles if they are more expensive compared to petrol propelled vehicles. There are now ideas about stimulating the use of joint loading and unloading zones. Mrs. Sage reacts, the manufacturers can't be made responsible for the electric vehicles being expensive. More demand is needed. The question is 'how to get out of this vicious circle?'. Mr. Sonnabend reacts that benefits for using clean urban vehicles have to be created in order to create (economic) success. Mr. Fisher remarks that a city alone can't create sufficient demand by itself. Mr. Salvati indicates that more environmental issues are involved than only emissions. The batteries that are used also bring damage to the environment. The society has to decide on these aspects. Mr. Vermie asks the manufacturers 'how many vehicles are needed to be able to make competitive vehicles?'. Mrs. Sage says that this is a complex question of production planning and can not be answered in one number. Mr. Fisher remarks that reducing the effects onto the environment will cost money. Mr. Sonnabend raises the question 'how to offset the difference in price?'. Subsidies are temporary and will result in a market that collapses if subsidies fall away after a certain period. The same discussion can arise when the technology for fuel cells is available for the market within several years.

The 'round along the table' is proceeded by Mr. Major. He stresses that all contributions are welcome and he indicates that comments on Thematic Network BESTUFS are listened to and that the doors are



open. Furthermore, he asks the participants to contact not only the European Commission but also the member states on a national level considering this theme.

Mr. Dorner addresses the issues of telematics (fleet management systems, route and trip planning).

Mr. Montero remarks that the quality level of the presentations was high. He adds that a co-operative approach of local authorities and manufacturers are necessary to create mutual acceptance.

Mr. Palacin recommends that solutions should be limited to available technologies like it has been done at the ECOTRAN vehicle designed by IVECO. Existing vehicles should be improved based on existing and available technologies and experiences. Furthermore, weights and sizes have to be taken into account.

Mr. Hopensztand remarks that mainly the cost factor is the bottleneck that makes a high scale implementation of clean vehicles impossible at this moment.

Mr. Contursi describes the situation in the city of Genova. Time windows have been installed and carpooling is stimulated. There is a differentiated regulation according to emission classes. Car-poolers have fewer restrictions. To get information on the possibilities that cities have, he suggests the theme 'policy role for new and better transport' to be a focus for a next BESTUFS workshop. Mr. Wild says that it is a good idea to address this subject.

Mr. Storch states that framework issues should be highlighted. He raises the subject how this will develop and the possibility for a European standard for drivers.

Mrs. Gerbaudi asks whether studies are available about global pollution and pollution caused by generating electric power. Ms. Glücker reacts that it is better to generate electricity centrally on a large scale than to generate electricity (on micro-level) in the car. Mrs. Sage adds that because of the lifetime of vehicles of 15 years, the pollution caused by vehicles will reduce this decade.

Mr. Huschebeck remarks that there is always a compromise between global emissions (CO₂) and local emissions (e.g. NO_x and particles). Urban freight transport also has a psychological aspect. As the EUROTRAN example shows a positive image can be designed. This can increase the acceptability of the public for urban freight and the external effects it is causing. Another aspect to be addressed in BESTUFS can have the planning and provision of future infrastructure in cities.

Mr. Sonnabend remarks that trend development has already been discussed. There is now a common understanding between users and manufacturers. However, also public authorities are very important for urban transport. They should have a clear policy on how they manage the road and parking space. More information should become available about urban mobility and the role urban freight transport can fulfil. This issue is close to the CIVITAS initiative that is launched by the European Commission.



Mr. Britton says that a number of pilots are done in European cities and that some also were successful. He recommends that manufacturers should involve the city planners in the discussion.

Mr. Vermie remarks that it is a pity that a low amount of manufacturers are present at this workshop. Rotterdam is now working on favourable measures for stimulation of the use of clean vehicles in the city. Mr. Wild reacts that all manufacturers have been invited. To get commitment was very difficult.

Mr. Ruberti stresses the importance of quantitative data. Secondly he points out that propulsion concepts are important and he favours a soft evolution scenario for a slight but certain improvement of vehicles from an environmental point of view. His third point is that lower cost and increased productivity at new vehicles are the main drivers for success. The economic feasibility has to be taken into account. Other points of Mr. Ruberti are that the environmental impact of freight transport is becoming more important in the time. Also occupancy is important, goods delivery at night is an interesting approach.

Mr. Cremer carries out four points on the workshop. His first point is that he sees a gap between the demands of cities on the one hand and the demands of transport operators on the other hand. Cities want small electric vehicles but operators want big diesel trucks. Secondly cities must have a big interest in a well functioning goods flow at low costs because this keeps the city vital. At third, he raises the question how cities can improve the goods flow and at the same time reduce the traffic. For instance in the city of Cologne there is the possibility to use large vehicles for parcel services and food is delivered on transport bikes. His final point is that he missed experiences with vehicles running on natural gas. This is at the moment the most cost effective and clean solution. At the moment TNT tests gas delivery cars in congested areas. Mr. Sonnabend reacts that the success strongly depends on the local situation, the infrastructure available and the type of operation that is fulfilled. Mr. Zanframundo reacts on the points of Mr. Cremer by saying that IVECO is working on solutions based on CNG. Mr. Major remarks that at the CIVITAS initiative 50 million Euro are available but that no manufacturers have subscribed yet.

Mr. Monticelli remarks that this workshop is a good opportunity to point things out because the European Commission is preparing a paper on clean urban transport at the moment. Mr. Major reacts that the white paper will come available first, probably around Spring. Mr. Monticelli says that it would be interesting and useful to have a discussion about the green paper when it is published. Furthermore he indicates that there is still a misunderstanding about the development of vehicle based emissions. In the last 10 years significant reductions have been realised and this will continue in the next 10 years. Common understanding is required about the actual state of the situation. The keyword is quality partnership. There should be more certainty about noise emission. Also the interaction between the vehicle and the infrastructure must be taken into account. Together all actors involved will find common solutions. Innovation means several things and a good distribution of the clean fuel is essential. Furthermore he remarks the research aspect. In the USA and Japan there are common programs for the manufacturers. A common program however doesn't exist for Europe. There should be more attention for the European industry.



Professor Giannopoulos gives his conclusion that traffic, logistic and parking management all are essential and come before the improvement of the vehicle. Furthermore he says that how clean the trucks might be in the future they will cause indirect effects. He suggests a theme for a next workshop that is related to the connection between transport systems: connections and interfaces. Contacts from the side of BESTUFS should be made with other projects and thematic networks (e.g. THEMIS).

Mr. Wild remarks that interesting aspects have been identified and the comments, recommendations and suggestions will be subjects to be discussed in the steering group meeting that takes place on the 18th January 2001. Mr. Wild thanks everybody for the contributions and coming to Turin. He thanks IVECO for the support and closes the workshop of the first day.

Ad 5 'Guided technical visit at the "Centro Ricerche FIAT" at Orbassano, presentation and demonstration of research and development activities at FIAT and IVECO'

The participants of the technical visit are welcomed at the CRF by Marco Monticelli. Mr. Pera welcomes the participants again and introduces the CRF. The CRF is an independent division within the FIAT group. There is a strong commitment for technology transfer. There is technology transfer to the FIAT sector but also to external companies at national and international level.

Mr. Carrera gives a presentation about 'commercial vehicle development trends for road safety improvements'. Accidents caused by drivers are mostly the result of too high speeds, overtaking manoeuvres and use of alcohol. Driver help applications have been developed to increase the safety. The steps for system introduction from 1995 up to 2015 are in order of planned introduction: (1) comfort & assistance, (2) extending driving aids functions, (3) safety assisted manoeuvres, (4) vehicle telematic control and automatic manoeuvring and (5) full automatic driving. CRF has developed 'Adaptive Cruise Control (AAC)' for longitude and lateral driving assistance. CRF has also been involved in fleet management systems for public transport applications in the INFOBUS project. Next a video is shown about a lateral control support system that has been developed in co-operation with Renault and Volkswagen.

Next the IVECO prototype: INFODAILY is shown. This vehicle is equipped with many ICT applications for route navigation, mobile communication, emergency assistance, tracking and tracing facilities. The control panel is integrated with other functions of the vehicle (e.g. radio and air-conditioning).

Also the test vehicle for the Adaptive Cruise Control is shown. This driving support system makes use of microwave radar to measure the distance to a vehicle ahead of the truck.