



Inland Waterway Transport at the crossroad: **WWF calls for the right balance between navigation and river ecosystem needs in the NAIADES Action Programme**

WWF, the global conservation organisation, calls upon the EU to achieve the right balance between navigation and river ecosystem needs in the NAIADES Action Programme, which promotes inland waterway transport on Europe's rivers. This Action Programme can only be regarded as environmentally friendly if both local impacts on river ecosystems and global greenhouse gas emissions are considered equally.

Inland navigation is assumed to be an environmentally friendly mode of transport because it can emit less CO₂ than road transport. But the goal of more sustainable transport will not be achieved if the valuable functions/services that ecosystems provide us with are ignored (e.g. storage and retention of water for domestic, agricultural and industrial use, flood control, groundwater recharge, nutrient reduction and many others). All economic, social and environmental costs and benefits must be considered before undertaking major infrastructure developments. So far these aspects are not sufficiently reflected in the document related to the NAIADES Action Programme.

WWF, therefore, calls to take the following aspects into consideration.

1. What is the WWF position on Inland Waterway Transport and the NAIADES Action Programme?

- WWF supports Inland Waterway Transport (IWT) as long as plans and projects:
- meet all legal requirements (international, European and national legislation)
 - respect socio-economic needs, in particular of local and regional communities
 - are environmentally sustainable (e.g. help reduce climate-relevant transport emissions through techniques that do not negatively impact river ecology)
 - do not have negative effects on local and basin-wide river ecosystems

WWF supports some parts of the NAIADES Action Programme as innovative signals towards more sustainable transport modes in Europe. WWF, however, also calls for significant improvement of the programme in terms of its environmental aspects in order for IWT to be accepted as environmentally friendly.

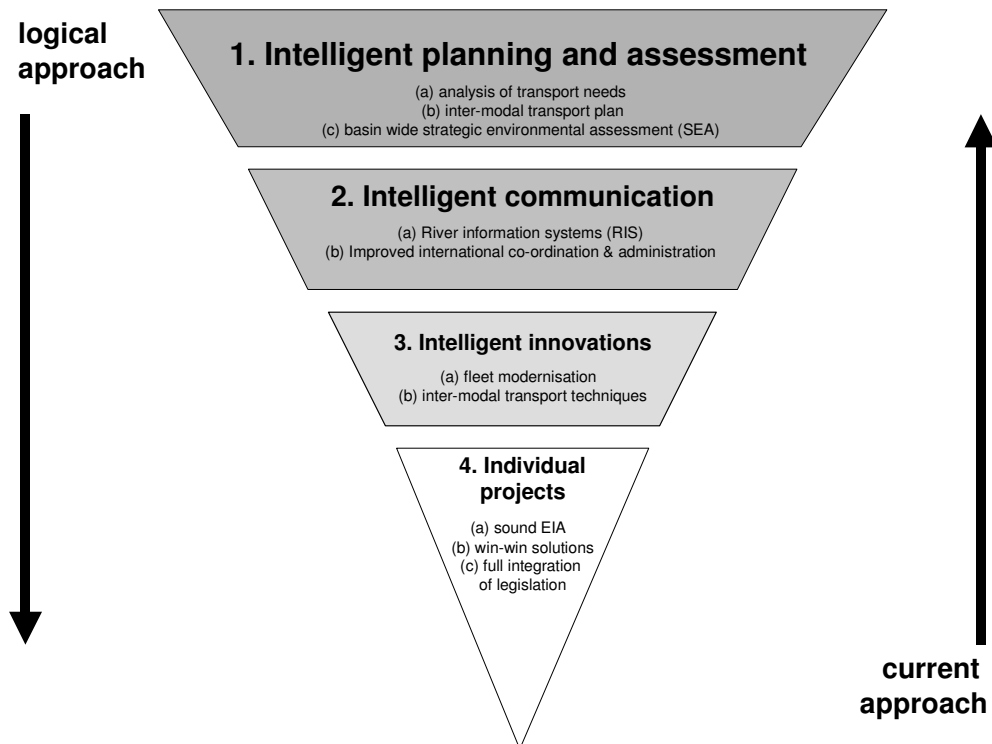
2. What needs to be done to improve the NAIADES Action Programme?

WWF supports the components of the NAIADES Action Programme that are related to modernization of the fleet, reduction of communication and administration burdens, and the introduction of new technology, e.g. River Information Systems (RIS). However, if the EU really seeks to foster environmentally friendly alternatives to road transport, both global emissions and local impacts on river ecosystems must be considered equally. So far, NAIADES fails to fully meet this principle. Furthermore, the implementation process of the Action Programme follows a concept that might be somewhat “building the house from the roof”.

Instead, the following approach should be used (illustrated below):

1. investigate the needs and impacts of promoting Inland Waterway Transport
2. improve communication and administration
3. invest in “reversible” projects (i.e. inter-modal infrastructure such as port warehouses and adequate un/loading equipment), and
4. after the previous steps have been taken, consider “irreversible” interventions in ecosystems (hydraulic modification of rivers).

Implementation of the NAIADES Action Programme



To become a more sustainable Action Programme, NAIADES should consider the following:

- The European IWT Infrastructure Development Plan, to be developed as part of the NAIADES Action Programme, must be subject to a Strategic Environmental Assessment (SEA) to evaluate the cumulative ecological impact of all projects and measures planned under NAIADES and TEN-T.
- The planned NAIADES European IWT Infrastructure Development Plan must include a sound and transparent description of all transport needs before any individual projects can be implemented. Any EU taxpayer's money must be justified by scientifically sound data showing the real needs for transport infrastructures.
- No new depth requirements should be introduced in addition to those already in effect under existing conventions unless they are based on a sound and basin-wide environmental assessment, and it is clearly proven that they do not have negative impact on the entire river ecosystem.
- The NAIADES Action Programme must take the natural status of river ecosystems into consideration and avoid risks to environmental services of natural river ecosystems.
- The NAIADES Action Programme must provide a clear answer on how to avoid emissions from old vessels and how to support rail transport and sustainable door-to-door distribution with a detailed implementation programme.
- The NAIADES Action Programme includes measures to support new fleet technology, but does not include comprehensive and complete assumption of future costs related to infrastructure projects. To be ecologically and economically credible, both aspects should be considered equally.
- The NAIADES Action Programme has to secure that the measures for stimulating fleet modernisation can make a significant contribution:
 - (a) by ensuring that the EU Innovation Fund will be transparent and will represent a considerable share of the total Programme fund
 - (b) by creating appropriate political framework conditions to avoid conflicts with the European competition policy (e.g. by creating block exemptions from existing laws on inland navigation)
 - (c) by providing a detailed programme on how to set up this fund
 - (d) by introducing a policy to favour innovation techniques over infrastructure projects
- The European IWT Infrastructure Development Plan needs to be made compatible with the Water Framework Directive (WFD) and other EU legislation. To be transparent and in line with WFD, this process must also incorporate a dialogue with all relevant stakeholders and this, of course, includes also non-governmental organizations, like WWF.



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Annex:

Detailed analysis of the sustainability of the NAIADES Action Programme

The mission of the World Wildlife Fund for Nature is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable and promoting the reduction of pollution and wasteful consumption.

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How sustainable is the NAIADES Action Programme?

The NAIADES Action Programme promotes IWT as an important sustainable mode of transport and states: *“together with rail and short sea shipping, inland waterway transport can contribute to the sustainability of the transport system¹”*. This statement is critically discussed below in relation to:

- global environmental aspects
- impacts on river ecosystems and environmental services
- IWT market share
- cost aspects
- legislative aspects
- opportunities for innovations and sustainable alternatives

1 Global environmental aspects

<i>IWT in comparison to air, road, and rail transport</i>	IWT shows clear advantages for the global greenhouse gas balance in comparison to road or air transport, but does not have a distinct advantage over rail transport in terms of specific emissions. To be promoted as environmentally friendly, NAIADES must not create direct competition with the existing rail axes (e.g. along the Sava River ²), but should support intelligent inter-modal transport concepts by using and supporting old and new railway lines actively. <u>This is not sufficiently mentioned in the plan so far, but needs to be considered.</u>
<i>influence of old vessels</i>	In particular, NO _x emissions are one of the most significant emissions relevant to IWT ³ . The latest report from the European Environmental Agency indicates that NO _x emissions from national navigation are at least 2-3 times higher than emissions from railway transport. ⁴ To be environmentally credible, <u>NAIADES must provide a clear answer on how to avoid these emissions from old vessels with a detailed implementation programme.</u>
<i>door-to-door emission balance must taken into account</i>	IWT is only a sustainable alternative to road or air transport if navigation routes are integrated in a sustainable, door-to-door distribution grid. A share of road transport has to be factored in to cover the actual source-to-source destination relation. However, most of the studies on IWT emissions do not consider this. The <u>NAIADES Action Programme does not adequately include this aspect and thus should be updated accordingly.</u>

¹ Communication from the Commission on the Promotion of Inland Waterway Transport “Naiades” An Integrated European Action Programme for Inland Waterway Transport

http://www.europa.eu.int/comm/transport/iw/doc/2006_01_17_naiades_communication_en.pdf, p.2

² As planned in South Eastern Axis of new “Networks for Peace and Development”, (TRANS-EUROPEAN TRANSPORT NETWORK; TEN-T priority axes and projects 2005, EC 2005, p. 46).

³ See “Inland Navigation and Emissions”, literature review done by WWF, available at

http://assets.panda.org/downloads/wwf_iwt_emissions_lit_review.pdf

⁴ EEA (2006) “Transport and environment: facing a dilemma”, available at http://reports.eea.eu.int/eea_report_2006_3/en (see figure 7 on p.47)



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2 Impacts on river ecosystems and environmental services

*ecological hotspots,
not only navigation
bottlenecks*

In order to provide their multi-purpose ecosystem services (e.g. drinking water, groundwater recharge, nutrient reduction, flood control, fish production, tourism, and others), natural rivers must remain dynamic ecosystems with large variations in depth, water and sediment flow, water level etc.

IWT, on the contrary, requires stable and predictable systems (with less change in depth, sediment transport, water level, etc.) to provide service for its needs. In fact, the Bottlenecks for IWT, which the Naiades Programme suggests eliminating, in many cases correspond to the most outstanding ecological hotspots of river ecosystems. This conflict has caused a dramatic situation in many European river ecosystems, and according to the Member States' assessment, one of the key obstacles for sustainable river basin management are hydromorphological alterations to the rivers.

If the NAIADES Action Programme does not take the natural status of river ecosystems into consideration, then the entire programme fails to be environmentally friendly and puts at risk the provision of environmental services.

*lifelines and
transport corridors:
example of the
Danube*

The recently published TEN-T report⁵ in the section on Priority Axis #18 (Rhine/Meuse-Main-Danube) states: "To give access to vessels of up to 3000 tonnes, a *minimum* draught of 2.5 meters is required along *the entire length* of the waterway". The background report⁶ that NAIADES Programme is based on translates this tonnage capacity into 3.50 m to 4.00 m draught (for self-propelled ships or pushed barges, respectively). This scenario would result in an ecological disaster for the Danube considering its current ecological status. Today, already 86% of the entire Danube is "at risk" or "possibly at risk" to fail the objectives of the Water Framework Directive (mainly due to hydromorphological alterations, caused to a large extent by navigation⁷). More than 80% of the former Danube floodplains have been lost⁸.

The designated IWT bottlenecks will threaten about 1000 km of the last remaining outstanding river stretches (see image below). In Hungary and Bulgaria these sections are the most important drinking water sources for the region. In the lower Danube, the potentially affected floodplain and side arm systems play an important role for flood protection. Many of these river sections have been designated as Natura 2000 sites or other types of protected areas.

⁵ TRANS-EUROPEAN TRANSPORT NETWORK; TEN-T priority axes and projects 2005, EC 2005

⁶ Study commissioned by the European Commission: PINE - Prospects of Inland navigation within the enlarged Europe, Full Final Report, March 2004. http://europa.eu.int/comm/transport/iw/doc/pine_report_report_full_en.pdf

⁷ ICPDR, 2004. Danube Basin Analysis (WFD Roof Report 2004, section 3.2.1-6), <http://www.icpdr.org/wim07/download.php?itemid=8113&field=file1>

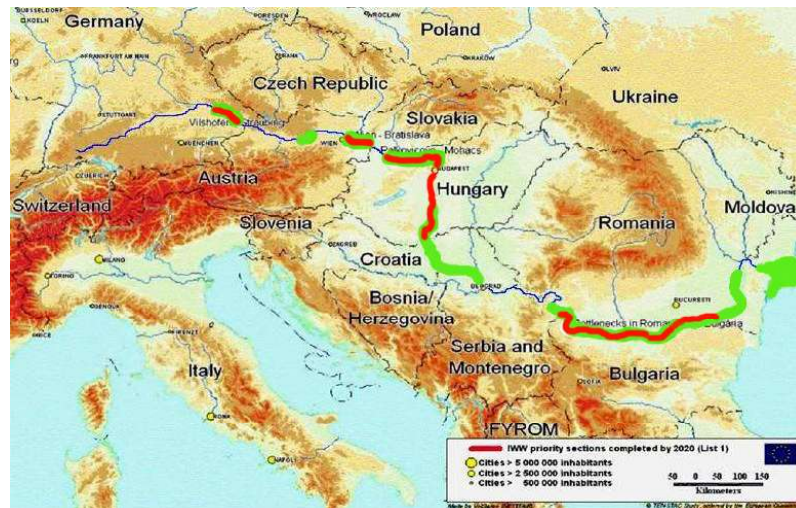
⁸ Danube Pollution Reduction Programme, Evaluation of Wetlands and Floodplain Areas in the Danube River Basin, Final Report, May 1999, Programme Coordination Unit UNDP/GEF Assistance prepared by WWF Danube-Carpathian-Programme and WWF-Auen-Institut (Germany), <http://www.icpdr.org/wim07/download.php?itemid=7978&field=file1>



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Consequently, it is essential that European IWT Infrastructure Development Plan, to be developed as part of the NAIADES Action Programme, is subject to a Strategic Environmental Assessment (SEA) to evaluate the cumulative ecological impact of all projects and measures planned under NAIADES and TEN-T. To meet basic environmental conditions, the planned NAIADES Action Programme has to strike a fair balance between ecological, transport, and socio-economic needs. No new depth requirements should be introduced in addition to those already in effect under existing conventions, unless they are based on a sound and basin-wide assessment and it is clearly proven that they do not have negative impact on the entire river ecosystem. To meet the precautionary principle, a moratorium on implementation of the individual projects is needed, until the results of the SEA are reflected in the “NAIADES European IWT Infrastructure Development Plan.

Ecologically high valued areas along the Danube (green sections) and designated bottlenecks under TEN-T (priority sections in red)



3 IWT market share

insufficient market data

The European Commission communication on the NAIADES Action Programme gives a detailed description of the current status of IWT and its market share. However, the assumption of increasing market share is not supported by sufficient market data as a system for a European market observation is only now being developed⁹. The planned NAIADES European IWT Infrastructure Development Plan must include a sound and transparent description of all transport needs before any individual projects can be implemented. This assessment must include type and quality of transport needs, not only volume. Any EU taxpayer’s money must be justified by real and scientifically sound data showing the real needs for transport infrastructures.

⁹ <http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/06/48&format=HTML&aged=0&language=EN&guiLanguage=en>



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4 Cost aspects

internalisation of external costs

The NAIADES Action Programme includes development of a framework of infrastructure charges for all transport modes, which would internalise external costs, such as accidents, air pollution, noise and congestion. This is a praiseworthy initiative as long as this framework includes all relevant costs, including environmental and resource costs, and all transport modes involved. So far, however, neither NAIADES nor the TEN-T programme consider external costs related to IWT sufficiently. On the contrary, the use of rivers as transport canals is currently treated as a "free good" and it is not recognised that favouring one use of the river, may compromise provision of other important and valuable services.

Several studies have already demonstrated the values of river and wetland ecosystem services, using market prices, estimation of avoided treatment costs and contingent valuations. For the Danube wetlands alone, a value ranging between US\$ 450-520 per hectare per year has been recorded¹⁰. Intact river stretches provide great potential for recreation and tourism worth 189 million euros per year¹¹. The estimated value of benefits from Danube floodplains is 7660 euros per ha per year and nutrient retention of Danube floodplains (i.e. water purification) is worth 368 million euros per year¹².

The recently-produced reports characterising European river basins, required under the Water Framework Directive (the so called Article 5 reports), have shown that hydromorphological alterations is one of the main problematic issues in the river basins. Several countries have identified navigation as a sector responsible. However, currently IWT pays minimal or no contribution to remedy its impacts on freshwater ecosystems. This shows that the polluter-pays-principle, embedded in the EU Treaty and numerous EU laws, is currently not applied to impacts caused by IWT.

In order to deliver long-term societal benefits, the NAIADES "framework for infrastructure charging" must consider external costs caused by existing and future IWT projects or programmes. This must include, environmental and resource costs, e.g. costs to compensate for the loss of natural flood protection, costs of lost capacities for water purification, nutrient reduction, drinking water supply, or groundwater recharge, costs to compensate losses in commercial and recreational fishing and tourist activities, losses of biodiversity and habitats.

¹⁰ Gren I.M. Groth K.H. Sylven M., Economic Values of Danube Floodplains, Journal of Environmental Management, Volume 45, Number 4, December 1995, pp. 333-345(13); Gren, I-M. 1994. Valuation of Danube Floodplains. Report to WWF-Auen Institute (Institute for Danube Floodplain Ecology), Rastatt, Germany; Kosz, M. 1996. Valuing Riverside Wetlands: the Case of the "Donau-Auen" National Park. Ecological Economics 16 (2), S. 109-127

^{11, 12} Gren, I-M. 1994. Valuation of Danube Floodplains. Report to WWF-Auen Institute (Institute for Danube Floodplain Ecology), Rastatt, Germany.



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*climate change
creates financial risks*

Recent studies on climate change and IWT clearly demonstrate an increase of financial risks for further IWT infrastructure investments. The Potsdam Institute for Climate Impact Research (PIK) documented a decrease of summer rain events during 1951-80 with an accompanied increase in temperature of about 1 C° over the last 50 years¹². In consequence, the Elbe River hasn't reached the profitable navigable depths of 1.60 m during four to six months per year in 1991, 1992, 2000 and 2003. Cost effective IWT was impossible and the situation will be even worse according to climate prediction models presented by PIK. This example supports evidently the need to adjust ships to the river conditions and not rivers to the ships. The NAIADES Action Programme includes measures to support new fleet technology, but does not include comprehensive and complete assumption of future costs related to infrastructure projects. To be ecologically and economically credible, both aspects should be considered equally.

5 Legislation

*integration of existing
legislation is
essential*

The European IWT Infrastructure Development Plan needs to be made compatible with the Water Framework Directive (WFD) and other EU legislation. WWF welcomes that Annex to the European Commission Communication on NAIADES Action Programme mentions that guidance will be provided on “environmental requirements and coordination with river basins management plans required by the Water Framework Directive (WFD).

We would like to stress that under the WFD:

New navigation and river engineering projects that would prevent achieving the WFD objectives can only be developed if certain WFD provisions are met, including:

- New physical modification” needs strict sustainability tests and provisions for mitigation (Article 4.7)
- No other water bodies in the river basin district are affected and other EU laws, including Habitats, Birds and EIA Directives, are respected. (Article 4.8)
- The same level of environmental protection as provided for by other EU laws is guaranteed (Article 4.9)

Navigation projects (new infrastructure or maintenance of river channels) must not cause negative impacts on the hydrological system unless the strict conditions granting an exemption from this WFD objective are met (see above). In case of major development programmes, such as the European IWT Infrastructure Development Plan, the entire programme must be examined to check its compliance with the WFD “no-deterioration” duty.

¹² F. Wechsung, A. Hanspach, F. Hattermann, P.C.Werner & F.-W. Gerstengarbe (2006): Klima- und Anthropogene Wirkungen auf den Niedrigwasserabfluss der mittleren Elbe: Konsequenzen für Unterhaltungsziele und Ausbaunutzen, <http://www.duh.de/uploads/media/PIK-Studie.pdf>



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- Navigation projects should be planned so as to allow the achievement of “good ecological and chemical status” or “good ecological potential” as required by the WFD and contribute to ecological improvements, both basin-wide and locally, with an overall positive net gain at each project site and for the river system as a whole (e.g. through restoration activities tied to the project). This also follows the idea of the ‘polluter-pays’ principle. Until now IWT has caused negative impacts without ‘paying’ for them.
- In the planning process, key stakeholders from all relevant groups have to be integrated from the start and genuine public participation must be ensured.
- The Directive calls to take account of the cost recovery and the “polluter pays” principle related to water services, including environmental and resource costs. See also in the section on costs.

WWF very much supports the findings of the NAIADES High-Level Meeting in Vienna to provide a structured dialogue on environmental issues with national waterway administrations, river commissions and inter-governmental commissions for the protection of the rivers. To be transparent and in line with WFD this process, however, must also incorporate a dialogue with all relevant stakeholders and this of course includes also non-governmental organizations, like WWF.

6 Opportunities for innovations and sustainable alternatives

Before implementing “irreversible” hydraulic changes on river systems to improve inland navigation, “softer” approaches should be explored. first, such as:

- ship technology* Adapting vessels’ design and standards to the conditions of particular rivers should be considered. This can include upgrading the existing fleet, or even building new ships. Low draught ship design allows for operation on inland waterways, particularly the Danube, without the draught restrictions of conventional vessels, e.g. PACSCAT¹³ concept.
- River information systems (RIS)* Telematic systems and information services for inland navigation – known as River Information Services (RIS) – increase the safety and efficiency of transport, thus improving the competitiveness of IWT compared to other means of transport. DoRIS, developed in Austria, is the system currently implemented for the Danube River. The decision of the EC to co-finance the RTD project COMPRIS¹⁴ (Consortium Operational Management Platform River Information Service) is a clear signal for the necessity of harmonized RIS installations throughout Europe.

¹³ Partial Air-Cushion Support Catamaran vessel designed to operate on the Danube at 2000t (80 truckloads) with a draught ranging from 1.5 to 2.5 metres. <http://www.pacscat.info>

¹⁴ A pan-European project, focused on the development and implementation of River Information Services (RIS) on the inland waterways in Europe. The project was launched in September 2002 and ran until the end of 2005, <http://www.euro-compris.org>



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inter-modal techniques Smooth and efficient connections from ships to other modes of transport will increase the quality and competitiveness of inland waterway transport. Benefits can be evaluated jointly with macro-economic impacts like reduced traffic emissions, improved safety, regional effects, labour, etc. The ALSO DANUBE¹⁵ project aims to promote the use of inland navigation as a key mode of inter-modal door-to-door transport chains.

political framework for technical innovations WWF appreciates that the NAIADES Action Programme emphasises the need for innovative vessel concepts, new ship technologies, eco-efficient engines, and renewable energy sources. This is clearly an important signal towards more sustainable transport modes in Europe. WWF also very much welcomes the idea to use public support measures to realise technical adjustments and modernisation of the fleet. The set up of an innovation fund at EU level is an important tool to create the basis for an innovation impulse. To pay fixed rates to support the “old-for-new” rule, as mentioned in the Commission Regulation (EC) No 805/1999 is an important instrument to encourage vessel owners and operators to renew their fleets. So far, however, it is not clear, how the EU funds will be exactly distributed among the five pillars of the NAIADES Action Programme. NAIADES has to secure that the measures for stimulating fleet modernisation can make a significant contribution:

- (e) by ensuring that the EU innovation fund will represent a considerable share of the total Programme fund to become more than a “green-washing” instrument
- (f) by creating political framework conditions to avoid conflicts with the European competition policy (e.g. by creating block exemptions from existing law for inland navigation)
- (g) by providing a detailed programme on how to set up this fund
- (h) by introducing a policy to favour innovation techniques over infrastructure projects.

¹⁵ EU funded Research and Demonstration Project, <http://www.alsodanube.at/>