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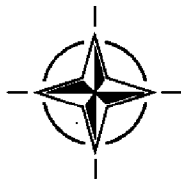
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AGARD CONFERENCE PROCEEDINGS 594

System Design Considerations for Unmanned Tactical Aircraft (UTA)

(les Considérations dans les projets de systèmes pour les aéronefs tactiques et non pilotés)

Papers presented at the Mission Systems Panel 8th Symposium held in Athens, Greece,
7-9 October 1997.



North Atlantic Treaty Organization
Organisation du Traité de l'Atlantique Nord

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- Recommending effective ways for the member nations to use their research and development capabilities for the common benefit of the NATO community;
- Providing scientific and technical advice and assistance to the Military Committee in the field of aerospace research and development (with particular regard to its military application);
- Continuously stimulating advances in the aerospace sciences relevant to strengthening the common defence posture;
- Improving the co-operation among member nations in aerospace research and development;
- Exchange of scientific and technical information;
- Providing assistance to member nations for the purpose of increasing their scientific and technical potential;
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Published July 1998

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ISBN 92-836-0057-6



*Printed by Canada Communication Group Inc.
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45 Sacré-Cœur Blvd., Hull (Québec), Canada K1A 0S7*

REPORT DOCUMENTATION PAGE

1. Recipient's Reference	2. Originator's Reference	3. Further Reference	4. Security Classification of Document
	AGARD-CP-594	ISBN 92-836-0057-6	UNCLASSIFIED/ UNLIMITED
5. Originator Advisory Group for Aerospace Research and Development North Atlantic Treaty Organization 7 rue Ancelle, 92200 Neuilly-sur-Seine, France			
6. Title System Design Considerations for Unmanned Tactical Aircraft (UTA)			
7. Presented at/sponsored by Papers presented at the Mission Systems Panel 8th Symposium held in Amfithea (Athens) Greece, 7-9 October 1997.			
8. Author(s)/Editor(s) Multiple			9. Date July 1998
10. Author's/Editor's Address Multiple			11. Pages 292
12. Distribution Statement There are no restrictions on the distribution of this document. Information about the availability of this and other AGARD unclassified publications is given on the back cover.			
13. Keywords/Descriptors			
UAV (Unmanned Aerial Vehicle) Design Reconnaissance Navigation Targeting Guidance Tactical intelligence Data fusion Avionics		Tactical aircraft Operational effectiveness Airborne operations Surveillance Command and control Tactical communications Detectors Signal processing	
14. Abstract			
This volume contains the Technical Evaluation Report, the Keynote Address and the 26 unclassified papers, presented at the Mission Systems Panel 8th Symposium held in Amfithea (Athens) Greece from 7th to 9th October 1997.			
The papers presented covered the following headings:			
<ul style="list-style-type: none"> • Applications • Operational Concepts I & II • Advances in UTA Techniques and Technologies (NAV, C³I, G&C) • Advances in UTA Techniques and Technologies (Sensors, Processing, Data Fusion) 			

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Government Reports Announcements & Index (GRA&I)
published by the National Technical Information Service
Springfield
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(also available online in the NTIS Bibliographic Database or on CD-ROM)



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ISBN 92-836-0057-6

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Hampton, Virginia 23681-0001
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publié par le National Technical Information Service
Springfield
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System Design Considerations for Unmanned Tactical Aircraft (UTA)

(AGARD CP-594)

Executive Summary

The Unmanned Tactical Aircraft (UTA) concept encompasses a broad class of recoverable vehicles designed to conduct the full range of lethal and non-lethal tactical missions.

Technologies are developing rapidly that will enable unmanned aircraft to undertake autonomous and semi-autonomous missions in high threat environments. Unmanned aircraft will operate in conjunction with and sometimes as alternatives to manned aircraft missions. The perceived advantages of utilising unmanned air vehicles are:

- significant reductions in through-life costs
- reductions in losses of aircrew on highly dangerous missions

The main purpose of this symposium was to provide an opportunity for the NATO community to explore and discuss the technological and operational issues associated with the deployment of unmanned tactical aircraft.

The call for papers produced a good response, indicating the importance and timeliness of this subject within the research communities. The symposium was structured into sessions as follows:

- Applications
- Operational Concepts (I & II)
- Advances in UTA Techniques & Technologies (I & II)

The papers presented generated a high level of interest; the symposium was well attended throughout and the programme committee is convinced that the objectives of the symposium were met. Discussions as the symposium proceeded and during the round table session revealed that there was little doubt that there were no technological barriers hindering the deployment of unmanned air vehicles that maintained some degree of operator supervision or control. Fully autonomous vehicles carrying lethal payloads were believed to present greater challenges. Further work is needed in developing operational concepts and addressing policy & doctrinal issues is judged necessary before UTA can undertake a more significant role in future air operations.

Les Considérations dans les projets de systèmes pour les avions tactiques et non pilotés

(AGARD CP-594)

Synthèse

Le concept de l'avion tactique sans pilote (UTA) couvre une grande catégorie de véhicules récupérables conçus pour exécuter l'ensemble des missions tactiques létales et non létales.

Des technologies actuellement en évolution rapide permettront aux UAT d'exécuter des missions autonomes et semi-autonomes dans un environnement de forte menace. Les UTA seront exploités parfois avec des avions pilotés et parfois seuls. Les avantages escomptés de l'emploi des véhicules aériens sans pilote sont les suivants :

- diminution sensible des coûts du cycle de vie
- diminution des pertes de vies humaines lors de missions particulièrement dangereuses

Ce symposium a eu pour objectif principal de fournir aux pays membres de l'OTAN l'occasion d'étudier et de discuter des questions technologiques et opérationnelles associées au déploiement des UTA.

L'appel de communications a trouvé un écho très favorable, ce qui témoigne de l'actualité du sujet et son importance pour les chercheurs de l'OTAN. Le symposium a été organisé en trois sessions comme suit :

- applications
- concepts opérationnels (I & II)
- avancées en techniques et technologies UTA (I & II)

Les communications présentées ont suscité beaucoup d'intérêt; l'assistance a été nombreuse tout au long de la conférence, et le comité du programme est convaincu que les objectifs du symposium ont été atteints. Il est apparu très clairement lors des discussions pendant le symposium comme pendant la table ronde qu'il n'existait aucune entrave technologique au déploiement d'UTA, à condition qu'il existe un certain degré de supervision ou de contrôle par un opérateur. Les défis posés par les véhicules totalement autonomes embarquant des charges utiles létales sont plus importants. Des travaux supplémentaires seront nécessaires pour développer des concepts opérationnels et aborder les questions de politique et de doctrine qui se posent. De tels travaux permettraient aux UTA de jouer un rôle plus important dans les futures opérations aériennes.