

# **Finland's Helicopter Programme**

Administrator Keijo Suila's report on the Finnish NH90 procurement of 1998-2008

1.3.2008

## **I Tasking**

In 2001 Finland ordered 20 NH90 transport helicopters from the French company NHIndustries as part of a Nordic acquisition with Sweden and Norway. As the 14-nation NH90 helicopter programme was badly behind schedule in the autumn of 2007, on 19 October Minister of Defence Jyri Häkämies appointed Mr. Keijo Suila as administrator to assess the Finnish helicopter programme.

The administrator was tasked to assess Finland's NH90 transport helicopter procurement *in toto* as well as its different phases. Furthermore, the report was to include economic, industrial and other germane considerations. Pursuant to the tasking, the administrator did not evaluate the necessity *per se* of the helicopters for Finland.

The objective was to establish both the customer's and contractor's perspectives as well as the appropriateness of the procurement process procedures. In addition, the administrator was to gather information and present his conclusions in view of future procurement programmes. The report deadline was 1 March 2008.

The administrator commenced his assignment as soon as he was appointed, and completed it in February 2008. The undertaking entailed extensive analysis of the preparatory and decision-making material of the pre-procurement phase as well as research into project documentation. In order to fully understand the matter, the administrator interviewed several representatives of the contractor and the customer. He focused, particularly, on Finns who participated in the process with a political, operational, commercial, technical or administrative management role. He conducted as many interviews as was needed so as to justifiably provide an adequate examination of the process.

The administrator was assisted by an expert in contractual law as well as technical and operational specialists in aviation procurement programmes. The Ministry of Defence also appointed a Project Coordinator and liaison staff to assist him.

## **II History of the helicopter procurement**

### **The political initiative for helicopters**

The need for procuring new helicopters was included in the Government Security and Defence Report<sup>1</sup>, submitted to Parliament in 1997. The security and defence white paper analysed Finland's security policy options in post-Cold War Europe, where the character of (military) threats has changed. The Government report introduced the concept of a "strategic strike", which described a surprise attack against the functions and actors vital to society. The white paper concentrated on improving Finland's defence readiness and ability to react from the standpoint of such a strike. As part of the capability to repel a strategic strike, the white paper detailed measures required to improve the capabilities of the Army.

The focus for developing the wartime troops of the Army was established on the basis of creating three rapidly mobilizable and highly mobile formations: readiness brigades. The objective was that the formation, called Brigade 2005, be extremely well trained and equipped as well as capable of operating in all parts of the country. In support of the readiness brigades, the white paper proposed that helicopters be procured to transport troops and key weapon systems and be used for close air support. The Government report did not establish the number of helicopters nor their funding. The plan in appendix 9 of the Government report stated that the helicopters be delivered from 2000 to 2003.

### **Organization and management of the helicopter procurement**

Helicopter operations were transferred from the Air Force to the Army in the beginning of 1997. At that time the helicopter fleet comprised seven medium-heavy Mi-8 and four light Hughes helicopters. The Helicopter Flight was established at the Utti Jaeger Regiment where, as per the white paper, the national helicopter and special forces training centre was also to be created. The task of preparing and implementing the new helicopter procurement was assigned to Army Staff. The Ministry of Defence continues to guide the helicopter programme and remains responsible for industrial cooperation, along with the Ministry of Trade and Industry<sup>2</sup>.

The Army's long term plan was completed in the autumn of 1996, the unclassified printed version of which bore the title: *Tietoyhteiskunnan maavoimat. Maavoimien kehittämissuunnitelma 2020*<sup>3</sup> (The

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<sup>1</sup> Government report: "The European Security Development and Finnish Defence", 17.3.1997 (VNS 1/1997 vp).

<sup>2</sup> The Ministry of Trade and Industry was recently merged with the Ministry of Labour and some other entities, forming the present Ministry of Employment and the Economy.

<sup>3</sup> Tilander, H. (2006): *Sotilaan vuosikymmenet. Muistikuvia noottikriisin ajasta EU-Suomeen. (A soldier's decades. Recollections from the diplomatic note crisis to EU Finland)* Kustannus Oy Suomen Mies, Helsinki. (pp. 216–255)

Army in an information society. Army vision 2020). The Army's long term plan introduced the idea of procuring multi-role helicopters for routing the enemy's special forces. This function called for troop transport capability, ample firepower and night capability. However, the helicopter procurement included in the 1997 Government report differed so much from the Army's concept for multi-role helicopters that the Army decided to reconsider their plans.

In the spring of 1997, the Army Staff commissioned a preliminary report tasked to assess the need for helicopters and to establish user requirements as well as Integrated Logistic Support (ILS), training and budgetary requirements. The report was completed by the end of 1997. Along with transport capability, the report highlighted the helicopters' combat performance requirements<sup>4</sup>, as the most dangerous threat for a helicopter is another helicopter. Hence, the logical conclusion was to purchase transport helicopters *as well as* combat helicopters which would escort and defend the transport helicopters. Defining the operational purpose of the helicopters proved difficult because the close relationship between the readiness brigades and the helicopters was still on the conception level, lacking any practical applications. The preliminary report called for the introduction of the first Finnish helicopters in 2001, with Full Operational Capability in 2005. No exact number of helicopters was determined at this stage.

### **The handling of the procurement authority in Parliament**

During the summer of 1997 the Army Staff put forward a FMK 7.7 billion procurement authority for the following year's budget proposal. This sum was intended to be used in equipping the readiness brigades. Of this figure, FMK 3.6 billion was earmarked for helicopters<sup>5</sup>. On 17 February 1998 the Ministry of Defence submitted a report to the Parliament with regard to the procurement authority of readiness formations. The report detailed the operational purpose of the helicopters as well as the exact ratio between transport and combat helicopters. The helicopters' share in the procurement authority was FMK 3.8 billion.

Prior to the preliminary debate in the plenary session on 19 February 1998, a vigorous and lengthy public debate regarding the helicopter programme had ensued. In particular, combat helicopters were facing stiff opposition. After two rounds of negotiations the parties represented in the Government reached a compromise with Defence Minister Anneli Taina and Prime Minister Paavo Lip-

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<sup>4</sup> *ibid.*

<sup>5</sup> *ibid.*

ponen. The helicopters' share in the procurement authority was cut from FMK 3.8 billion to FMK 2.2 billion<sup>6</sup>. On 1 April 1998 the Parliament decided to allocate FMK 6.1 billion in the first supplementary budget of that year for the purpose of equipping the readiness formations, FMK 2.2 billion of which was earmarked for transport helicopters. As a result of the parliamentary process, combat helicopters were completely eliminated at this stage. In 2001, the Parliament also allocated a total of FMK 1.07 billion to the helicopters' maintenance and ground support system.

## **Nordic cooperation**

Immediately after the procurement authority was granted, Minister of Defence Anneli Taina announced that Finland would explore helicopter cooperation with Sweden<sup>7</sup>. The initial steps of Nordic defence materiel cooperation had been taken under the 1994 Co-operation Agreement Concerning Nordic Armament Co-operation between Denmark, Finland, Norway and Sweden<sup>8</sup>.

In 1996 a preliminary investigation group was established to study the possibilities of cooperation regarding the Nordic Standard Helicopter. The working group presented its final report during the summer of 1998 in favour of Nordic cooperation in order to generate savings. A preliminary Nordic Standard Helicopter Program (NSHP) Office was established in Stockholm the following autumn, tasked to prepare a cooperation agreement and a Request for Information (RFI).

As soon as the 1997 security and defence white paper was approved by the Parliament the Army began preparations for the helicopter procurement. During the autumn of 1997 the Army Staff conducted price and performance comparisons, participated in seminars and established contacts with countries which had plenty of experience in helicopter operations<sup>9</sup>. Once the procurement authority was granted in the spring of 1998, the MOD invited ten helicopter manufacturers to preliminary talks in May-June 1998. NHIndustries (NHI) were among the manufacturers that visited Finland. During the summer the manufacturers were sent questions with regard to helicopter systems and logistics. All others except NHI answered the questions by August. Helicopter manufacturers were visited during the autumn of 1998. Based on the detailed information received, Finland meticulously prepared a National RFQ, should Nordic cooperation fall apart.

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<sup>6</sup> Ahoniemi, L. (2000): *Taistelu helikoptereista. Eduskunnan ja puolustushallinnon välisen asiantuntijavallan tarkastelu, esimerkitapauksena maavoimien tilausvaltuuskysymys (The battle over helicopters. Study of a power struggle between MOD experts and the Parliament; Army procurement authority as an example) 1998*. Edita Oy, Helsinki.

<sup>7</sup> *ibid.*

<sup>8</sup> Signed on 2 December 1994

<sup>9</sup> Ahoniemi, L. (2000); Tilander, H. (2006)

Nordic helicopter cooperation was consolidated in the summer of 1999 when the four countries' Ministers of Defence signed a Framework Agreement. The goals of NSHP cooperation were to procure a helicopter which met Nordic requirements, generated savings in the procurement phase as well as cooperate in maintenance and training during the life cycle of the helicopter. The objective was to prepare a joint Request for Quotation, albeit in such manner that all participating countries sign their own national purchase orders. The Swedish procurement authority *Försvarets Materielverk* (FMV) was used as the participating countries' joint procurement organization in the RFQ phase.

On 29 November 1999 a Nordic RFQ was sent to five potential contractors. The following provided their Tenders to FMV by the deadline: EHIndustries (of the EH101), Eurocopter (of the Cougar Mk2+), Sikorsky (of the S-92) and NHI (of the NH90). Boeing abstained. As a result of further evaluation, negotiations were started with NHI and Sikorsky. A Nordic test team flight tested their helicopters. Hereafter, the focus of negotiations shifted to NHI. The NSHP Office requested revised quotations from NHI and Sikorsky in March 2001, emphasizing their new and improved helicopter versions. After having received the revised quotations, the NSHP Office decided to pursue negotiations with NHI only.

### **The national purchase order**

Of all the helicopters offered, the NH90 was the one which best fulfilled the Nordic countries' diverse requirements because both tactical transport<sup>10</sup> and naval<sup>11</sup> variants were being developed. The version ordered by Finland closely resembled the German version. Tactical Transport Helicopter (TTH) roles consist of battlefield transport, medevac, combat search and rescue (CSAR), combat support (airborne command post, intelligence and surveillance support), executive assistance to the other authorities in SAR as well as possible international duties.

In October 2001 Finland signed a contract with NHI for 20 NH90 transport helicopters. In addition, a contract on industrial cooperation (offset) and contracts on Patria's engine assembly and final assembly lines were signed. In accordance with the original schedule, the first helicopter was to be delivered by October 2004 and the final one by October 2008.

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<sup>10</sup> *Tactical Transport Helicopter, TTH*

<sup>11</sup> *NATO Frigate Helicopter, NFH*

The technical responsibilities of Army aviation were transferred from the Army to the Air Force in the beginning of 2001. After the transport helicopter contract was signed, programme management was transferred to Air Force Headquarters and Nordic cooperation and coordination diminished. At this stage the NSHP Office began cooperation with NAHEMA<sup>12</sup>

### **Delay in delivery**

In accordance with the 2001 contract the first Finnish helicopter was to be delivered in 2004. In the autumn of 2003 NHI informed Finland that they could not deliver the helicopters as per the contract. In order to minimize the delay NHI proposed that the helicopters be delivered in three different configurations, i.e. the *Initial Operational Configuration (IOC-)* and the *Nearly Operational Configuration (IOC+)*, which was later to be modified into the *Final Operational Configuration (FOC)*. At this stage NHI did not provide any information on delivery schedules nor on the actual characteristics of the IOC configuration.

In the summer of 2005 Finland told NHI that the IOC concept could be explored. Finland participated in the type certification process of the IOC version by setting its own requirements for the approval of the IOC concept (including, among other things, additional training) and for IOC cold weather operations capabilities. In the spring of 2006 the NAHEMA completed the qualification process, after which the IOC qualification process of the Finnish version began. Apart from the searchlight, anti-icing system and manuals, the Finnish type certification process was completed in the spring of 2007.

In addition to NAHEMA's type certification, the helicopters have to be nationally certified by the Finnish military aviation authority before they can be put into use. Germany completed its own official certification in the end of 2006. The Finnish certification process, largely dependent on the German certification, was completed in February 2008.

Since the original purchase order did not include the IOC version, in 2006 Finland began to negotiate with NHI regarding the changes in the original contract of the helicopter procurement as a result of the IOC concept. Eventually, the customer and the vendor came to a contractual disagreement

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<sup>12</sup> NATO Helicopter Management Agency

regarding the interpretation of the liability cap. Points of contention included NHI's liability as such, as well as the amount and method of compensation for the delay in delivery and the non-compliances & non-conformities of the helicopter, additional late fees as well as compensation for additional costs incurred by the IOC configuration. The negotiations stalled in the beginning of 2007 after which they were transferred from the Air Force Headquarters to the Ministry of Defence. The top management of the MOD and Eurocopter began negotiations, resulting in an agreement in December 2007. The original contract was amended by NHI agreeing to pay Finland nearly EUR 20 million in compensation for delay in delivery. Furthermore, as part of the compensation package, Patria's assembly plant in Jämsä (Halli) would become the Nordic maintenance centre. According to the new contract, the first Finnish IOC helicopter would be delivered in March 2008 and the last FOC helicopters by 2011.

### **III Key observations**

#### **1. The contractor**

NHI was established in 1992. It was created by four countries<sup>13</sup> in order to develop new, competitive weapon systems by combining resources (=achieving synergies in labour and technology). The industries of the four nations became partners in NHI, whilst they otherwise competed against each other in the international market. The four nations' initial public investments in product development were invaluable. Otherwise, the NH90 project would never have been created. NHI's knowhow is in the international vanguard. The politically spawned European arrangement was organized as a consortium, whose effectiveness has faced challenges, to say the very least.

Since their main customer (in the beginning) was NAHEMA, a consortium comprising several NATO countries, inertia had permeated the decision-making process. Agreement by consensus at all levels of hierarchy slowed down the process, preventing efficient decision-making.

#### **2. NHI: A new operator in the market – an instant sales success**

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<sup>13</sup> Italy, the Netherlands, France and Germany



The prototype of the NH90 took its first flight in 1995. However, it was not until 2000 that mass production started as this was when the NAHEMA countries signed the production contract. Up until then the NH90 was not much more than a product development project.

As a new operator in the market with its product still in development, NHI was flexible in sales negotiations, accepting several tailored variants. The simultaneous development of several versions, including the qualification & certification process, led to slower-than-expected manufacturing and production.

The rapidly accumulating sales orders also surprised the company, forcing them to concentrate their resources. NHI set the type certification of the German TTH as their number one priority as it was their biggest order by volume. Once the basic German version was certified, the others could also rapidly follow suit. The Finnish programme also stood in this queue, albeit right after Germany.

### **3. The cumbersome certification practice in Europe**

In addition to the contractor's internal inertia, the European certification process has significantly delayed NH90 deliveries. No common certification process exists in Europe as regards military aircraft. Instead, every country (mainly their military aviation authorities) makes its own decisions.

The qualification of the basic TTH in Germany was delayed until the beginning of 2006. Since this was the milestone for the others to follow, the Finnish approval process had to wait for it.

NHI/NAHEMA are aware of the need for improved European practices. In the civilian aviation sector the joint European certification process runs smoothly.

### **4. Aviation standards**

Civil aviation standards differ from those in military aviation. Civil aviation standards hark back to the creation of the *International Civil Aviation Organization* (ICAO), established in 1944 under the United Nations. In the 1970s the national aviation authorities in Europe agreed on a joint cooperative organ, the JAA, resulting in the Joint Aviation Requirements (JAR). This process has continued into the 21<sup>st</sup> century, with the European Parliament and the European Commission implementing common rules and certification standards for civil aviation. The *European Aviation Safety Agency*

(EASA) was established in 2003, taking over the civil aviation's regulatory function from the EU member states' national authorities. Civil aviation in Europe is now conducted under the umbrella of a single, common authority: the EASA.

In contrast, there are no common international military aviation standards and requirements. As military flight operations have more or less remained national matters, military aviation authority functions have followed suit. NATO standards, however, have partly been accepted as international standards. It took until 2004 to establish the *European Defence Agency* (EDA) and until 2006 to create the *European Military Aviation Authorities Group* (EMAAG), of which Finland, too, is a member. The Finnish Military Aviation Authority (MAA-FI) was established at the Finnish Air Force Headquarters in 2007. The authority has begun to generate military aviation regulations, partly relying on EASA regulations. The NH90 transport helicopter was the first aircraft to receive type certification from this Office.

At the turn of the century military aviation standards were underdeveloped and country-specific. This has clearly complicated and hampered the contractor's and the customers' efforts in the NH90 programme.

## **5. Nordic cooperation**

The Nordic countries began helicopter cooperation in 1998. The goal was to achieve financial gains and synergies in the procurement, as well as in future operations (maintenance, training). The initiative for this came from politicians.

An NSHP Project Office was established in Stockholm, tasked to coordinate the common procurement, including the development of common requirements for the new helicopter. In the end, NSHP recommended that the NH90 be procured. After this, each country pursued bilateral negotiations with NHI.

It proved difficult to come up with a common configuration. At the end of the day, countries still wanted their own, distinct versions. Denmark selected an altogether different helicopter type (the EH101) and the Swedish and Norwegian configurations diverged from that of Finland (Norway's naval version, Sweden's own systems and different sized cabin). In the end, all of the Nordic countries negotiated their own purchase orders, selecting dissimilar variants and versions.

If there is a lesson to be learned from the procurement phase of the NH90, it could be that, whereas Nordic cooperation may thrive at the political level, common action is often unachievable in practice. NSHP cooperation was often time consuming and drained the scant expert resources of the participants.

Nevertheless, the Nordic countries' common representation in the initial phase fostered the interest of the potential contractors. In the long run, Patria also benefited from it.

## **6. Finland's status as a buyer**

The timing of the negotiations with NHI was both good and bad. One must remember that as late as 1998 the NH90 was not even a serious contender. NHI was interested in the Nordic countries because it was very much in NHI's interest to rapidly gain references from business contracts. Finland and the other Nordic countries were certainly desirable for this purpose, due to their good reputations. Hence, the Finnish contract was advantageous to Finland. It can be assumed that it was financially advantageous as well. A sizable down payment paved the way for a lucrative contract. Since Finland was active early on, Patria's role was exceptionally strong at the end of the negotiations. This would not necessarily be the case in today's business climate.

In hindsight it is clear that Finland actually signed a contract for a product development project, even though at the time the Finns believed that the project involved the latest and greatest technology, which was the most suitable for Finland and which would be delivered iaw the programme schedule. It is easy to appreciate the customer's high level of confidence at the time when the contract was signed. After all, large European nations had just ordered 298 helicopters and the prototype had been flown as early as 1995.

## **7. Programme management**

The NH90 programme has been managed iaw the MOD's and the Defence Forces' general practices. In the initial phase the Chief of Defence tasked the Army to prepare the procurement, based on the judgment that they would be the end user. In order to strengthen the programme's aviation technology expertise this responsibility was transferred to the Air Force in 2001. The transfer of

responsibility halfway through the project resulted in failures in communication, such as in the interpretation of specifications.

The programme organization has been undermanned and under a heavy workload during the entire project. Risks are always inherent in this kind of an organization. Communication between the customer and contractor has mostly been straightforward. Problems have arisen, not surprisingly, during commercial disputes.

The project organization concentrated on the technical monitoring and contacts with the contractor. Economic concerns did not rise to the forefront until 2006, when contractual penalties were identified as a major point of contention.

It was impossible to unequivocally establish how well or how poorly various sub-projects have been adapted to the altered schedules. These include spare parts, tools, maintenance hangars and maintenance spaces, maintenance systems, maintenance regulations, repairs, mechanic and pilot training as well as the timing of recruitment.

## **8. The NH90 programme lacked clear leadership**

The programme has been characterized by an organizational lack of unity and a lack of leadership during its entirety. This applies both to the customer and the contractor. The contractor's consortium structure, the NAHEMA and the customer's several levels of hierarchy (the MOD, Defence Forces, Patria, Army, Air Force and NSHP) have all contributed to placing several players in the field, although without clear leadership.

The contractor's multilateral consortium structure and the learning curve of a new, cooperative model were the causes of the complicated decision-making and, simultaneously, the lack of leadership. Whilst the customer's organization was administratively clear-cut, all of the above mentioned actors, responsibilities and roles have from time to time obscured who the real authority on the customer's side was. In other words, there was no perceptible "project owner" on either side.

## **9. Contractual amendment**

The amended purchase order, approved in December 2007, can be construed as appropriate and justified from the Finnish perspective. The reason for this is that the amendment guaranteed the continuation of the programme with revised schedules as well as delay compensations as per the original contract. Furthermore, the simultaneous approval of the IOC configuration also secured the continuation of development and aircraft deliveries. On the whole, the approval of technical solutions such as the IOC configuration is not uncommon in aviation procurement projects.

## **10. Should one procure established technology or invest in new innovation?**

As regards procurement decisions, it is imperative to understand whether one is procuring something still in a product development phase or established technology. Strong arguments can be made for either, but their risks must also be understood. It is clear that there are always significant risks in products still being developed.

In its 2003 resolution on procurement policy the Ministry of Defence determined that the Defence Forces would only procure established technology. This may make sense as a general rule, but as a categorical order it might be short-sighted and ill-advised. After all, the life cycles of many products span decades. In other words, the question is: should one procure old technology if state-of-the-art technology is around the corner? For instance, maintenance security and availability of spare parts may be unreliable for aircraft having passed their mid-life. When technological quantum leaps occur, it is particularly important to consider the pros and cons from the perspective of the entire life cycle.

When it comes to the NH90 programme the decision was to procure new technology which was not yet complete but which had already been evaluated as the best option in the national comparison. Interoperability with partners who had already committed to sizable orders strengthened confidence in the product. Therefore, judging by information available at the time, the selection was understandable and warranted.

As regards the NH90, interoperability was an objective as well as a principle. In the fullness of time Finland will operate common technology with its partners. This will most probably be a significant asset in future international crisis management operations.

## **11. Project communications**

The Finnish helicopter programme has continually received bad press. Problems began even before the budget proposal in 1998. The project was launched as an upshot of the new security and defence white paper 1997, which introduced a strategic strike as a new military doctrine (i.e. the new forms of crises and warfare). Troop mobility was highlighted and the plan to create readiness formations was presented. The white paper proposed the closure of several garrisons and shortened service periods for conscripts.

Even though the content of the white paper came as a surprise, it was later applauded. The existing bottom-up process transformed into a top-down model. This spurred negative reactions which later translated into trouble for the helicopter programme.

Readiness formation plans also included the purchase of new helicopters. In the beginning, the procurement included transport helicopters as well as combat helicopters, later known in Finland as “escort” helicopters.

However, the new operational concept as well as the helicopters’ purpose and tactics (readiness brigades operating *with* helicopters) were inadequately defined at that stage. This set off an unmanageable free-for-all public debate on the programme. Furthermore, the branches of the Defence Forces themselves contributed to the public debate by providing contradictory opinions.

The procurement was passed in the Parliament, although not without a huge stir and drastically curtailed and altered (sans the “escort”/combat helicopters). The operator had yet to determine what was needed and how the equipment was eventually to be used. With regard to helicopters, technical and operational know-how was extremely limited in Finland.

The above description regarding the inception of this venture underscores the fundamental importance of having a detailed project description as well as a clearly defined mission and user commitment in order to properly motivate the different interested parties, internal and external (e.g. political decision-makers and taxpayers), whatever the programme.

The delay in the helicopters’ deliveries has, naturally, received a lot of attention. Communication has mainly been reactive, focusing on damage control. The obvious problem has been the contractor’s inability to confirm or accept revised delivery dates. Instead, the schedule has gradually moved

to the right. Nevertheless, the misconception that the delay would only involve the Finnish programme or that the delay originated from this country has been blown out of all proportion in Finland.

Proactive communication, harmonized with the contractor, would have improved the state of affairs and, perhaps, alleviated the immense pressure under which people had to work.

#### **IV The administrator's conclusions**

##### **The report warrants the following key observations:**

1. The delay regarding the delivery was mainly due to the fact that the contractor is a new joint venture and that the NH90 helicopters were still in product development.

The project timetable was too ambitious.

The evaluation process showed that all parties have been acting in good faith.

2. Finland could have only marginally accelerated the delivery of the helicopters because Finland was totally dependent on the certification and manufacture of the NAHEMA TTH.

3. The venture was created as an amalgamation of political will and commercial practice, which, together, hampered the smooth execution of the programme.

4. Finland made a good contract and received proper compensation for the delay in delivery.

5. There is strong reason to believe that Finland selected the right helicopter, especially, from the life cycle perspective. This is because the NH90 (in its final configuration) is the helicopter that best fulfils the technical requirements and, due to the common selection, its interoperability makes it highly suitable for international operations.

6. Processes, organizing and risk assessment could have been better executed – on both sides. The following provides more details on this.

## **V Lessons learned**

1. When it comes to the beginning of a project, one must ensure that user requirements and use descriptions are sufficiently clear. Enough time and resources have to be allocated for this phase. A clearly defined mission is essential not only for the programme itself; it is also invaluable for coherent communications and organizational commitment.

2. The present procurement policy should be reassessed. More detailed guidance should be provided for risk assessment, procurement of products which are still in the product development phase, purchase of intellectual property as well as for other issues related to procurement. Risk assessment shall also be included in the required official certification process.

The goal of the present procurement policy is “the long-term and cost effective development of defence materiel”. Economic or commercial aspects should be better reflected in procurement policies.

3. The present procurement processes are complex and multidimensional. Process diagrams do not readily identify the owner of the entire project. One should analyse and assess the processes in question, aiming for improved effectiveness and streamlined decision-making.

Projects must have clear owners, steering groups and programme managers, who are bestowed with sufficient responsibility and powers. As project/programme organizations are created, appropriate operational and technical know-how on the part of the user as well as commercial and legal expertise are, of course, required. Project organizations must comprehensively pay attention to the level of requirements, required ancillary investments and life cycle issues.

Programme organizations should have the best possible continuity. Personnel changes should be kept to a minimum in order to facilitate consistent programme execution. Ownership, authority and decision-making powers must be clearly defined. The ground rules of communications must be explicit, such as who is allowed or not allowed to speak in any given phase.



4. The ground rules of communications should be clarified. The goal is “active, open and transparent communications”. This, however, was not achieved in the NH90 programme. The rules on communications, among other things, should be better defined during all phases of the procurement process.

5. Finland should actively support the development of a common set of rules for certification practices in Europe.