

# CLAWS OF THE CELTIC TIGER



**IRISH MANUFACTURE OF  
MILITARY AND SECURITY EQUIPMENT  
AND “DUAL-USE” COMPONENTS**



# Claws of the Celtic Tiger

An appendix to:

**Undermining Global Security  
The European Union's Arms Exports**

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# Claws of the Celtic Tiger - Foreword

In January 2004, the Irish section of Amnesty International commissioned new research into Irish involvement in the “arms trade” and the extent to which the existing export-control system both in Ireland across Europe is inadequate.

The resulting report, *Undermining Global Security – The European Union’s Arms Exports*, documents both the inadequacies of the existing system and the failure of governments across the EU to take effective action.

This appendix, *The Claws of the Celtic Tiger*, looks at the extent of the MSP (military security and police) sector in Ireland and at some of the issues raised.

Amnesty International is not opposed to the arms trade per se but feels that the lack of transparency and accountability in the current export-control system creates a situation in which members of the Oireachtas, concerned members of the public or investigative journalists cannot find out what is being exported from Ireland or what it is being used for.

Commentators have used the argument that exports of military and security equipment from Ireland represent only a small percentage of total exports and that the creation of a legally binding and rigorous system is taking a sledgehammer to crack a nut. However the key issue is not the extent of the industry but its impact on human rights.

Ireland has a legal and moral obligation to promote and protect human rights and to ensure that no equipment will be exported from Ireland to countries where it will facilitate or cause the abuse of human rights.

# 1. Introduction

According to the Department of Foreign Affairs successive Irish governments have “attached priority to human rights in terms of Ireland’s foreign policy”<sup>1</sup> and the government has designated a Minister of State at the Department of Foreign Affairs with special responsibility for human rights, further enhancing their strong profile in Irish foreign policy.

The Department of Enterprise, Trade and Employment (DETE) also states that “the promotion and protection of human rights is at the heart of Irish foreign policy and, as such, is a significant factor which is taken into account when [export] applications are being assessed.”<sup>2</sup>

Whilst Amnesty International welcomes this focus on human rights it remains concerned that the lack of action by the Irish government on improving its controls on arms exports is undermining this stated commitment.

In October 2001 Amnesty International (Irish Section) published the results of research<sup>3</sup> which challenged the oft-repeated claim that *‘Ireland is not a producer of arms in the normal sense of the word’*<sup>4</sup> and highlighted the inadequate level of information provided to the Irish parliament and public on the arms and security equipment exports that have been authorised by the Irish government. Furthermore the report clearly highlighted Ireland’s growing involvement in the supply of dual-use components and systems that could be incorporated into military, security or police (MSP) equipment or weapons systems.

Following the publication of Amnesty International’s research the Irish government acknowledged many of AI’s concerns and in July 2002 the DETE announced that an independent research organisation - Forfás - would undertake a public consultation process to evaluate Ireland’s export-controls.<sup>5</sup> The report of phase one was published in June 2003 and at the time of going to print we are still waiting for a publication date for the final report. Amnesty International calls on the minister to ensure that there will be a full debate on the contents of the report and speedy implementation of all recommendations.

Amnesty International strongly welcomes this public consultation process. However, the results of this process so far, have reinforced AI’s concerns about Ireland’s export-control system and parliamentary and public reporting. The current information provided by the Department of Enterprise, Trade and Employment (DETE) still fails to allow effective parliamentary and public scrutiny of Ireland’s arms exports.

This brief report provides updated information that illustrates the Irish government’s continuing failure to adequately control a range of MSP exports. In particular, such a lack of transparency means that Amnesty International continues to be concerned that licenced production agreements and exports of dual-use components or systems by Irish companies, authorised by the Irish government, may be used in weapon systems that contribute to human rights violations.

## 2. Arms brokers, shippers and transport agents

During a Dáil Debate in November 2001, the Minister for Foreign Affairs responded to the concerns raised by Amnesty International regarding the activities of arms brokers and the lack of Irish controls on such activities. The Minister stated that:

“The Amnesty report raises some further important issues in the area of export controls, for example, with regard to brokering, licensed production and end-use monitoring. These issues are the subject of ongoing consideration by my Department and the Department of Foreign Affairs in the context of Ireland's participation in a number of international non-proliferation regimes and the EU.”<sup>6</sup>

Unfortunately, in common with most other European Union countries, little advance has been made in Irish controls on arms brokers, a situation acknowledged in the Forfás public consultation briefing published in September 2003 which stated that:

“Ireland, like a number of EU states, does not have any governing legislation in relation to arms brokering”.<sup>7</sup>

Amnesty International is disappointed at the lack of progress by the Irish government in introducing export controls on the activities of arms brokers, shippers or transportation agents. The examples below illustrate how several arms brokers have had links with Ireland.

**Leonid Minin:** In 1996, the arms broker and dealer, Leonid Minin was listed as one of the shareholders of an Irish registered company Limid Invest Ltd. It is not known what role the Irish registered company played in Leonid Minin's business activities but other companies controlled by Minin have reportedly been involved in a range of arms brokering activities. The December 2000 report of a United Nations Panel of Experts investigating arms shipments to Liberia provided details of shipments of Ukrainian arms, organised by a company in Gibraltar, which were originally shipped to Burkina Faso. The weapons in question, however, were not retained in Burkina Faso. They were temporarily off-loaded in Ouagadougou and some were trucked to Bobo Dioulasso. The bulk of them were then trans-shipped within a matter of days to Liberia. The UN Report states that:

“most were flown aboard a BAC-111 owned by an Israeli businessman of Ukrainian origin, Leonid Minin. The aircraft bore the Cayman registration VP-CLM and was operated by a company named LIMAD, registered in Monaco. Minin was, and may remain, a business partner and confidant of former Liberian President, Charles Taylor. He is identified in the police records of several countries and has a history of involvement in criminal activities ranging from east European organised crime, trafficking in stolen works of art, illegal possession of fire arms, arms trafficking and money laundering. Minin uses several aliases. He has been refused entry into many countries, including Ukraine, and travels with many different passports. Minin offered the aircraft mentioned above for sale to Charles Taylor as a Presidential jet, and for a period between 1998 and 1999, it was used for this purpose. It was also used to transport arms.”<sup>8</sup>

A report by Global Witness in 2003 into the export of timber from Liberia stated that Limad AG was involved in a US\$2.5 million timber deal with the Chinese state firm China National Aero-Technology Import and Export Corporation (CATIC), which sells various armaments.<sup>9</sup>

**Balcombe Investments:** In 2002, the involvement of an Irish registered company with an international arms smuggling operation was reported. The company Balcombe Investments Limited reportedly owned the aircraft used, by Renan Airways of Moldova, to fly several shipments of illegal arms to Africa.<sup>10</sup>

In December 2000, a United Nations report mentioned suspicious dealings involving Renan Airways. A subsequent report on neighbouring UN-embargoed Liberia, confirmed those suspicions, identifying Renan Airways as having flown unauthorised cargos of arms from Moldova to Liberia. The report detailed how Renan Airways had worked with another company, Central African Airlines - owned by former KGB officer Viktor Bout - to ship illegal arms to Sierra Leone.

Balcombe Investments was registered in Ireland in 1992 by a Dublin-based company formation agent on behalf of an Isle of Man company, Portman Consultants Ltd. Company formation agents are not generally aware of the activities of their client companies and would have had no knowledge of Balcombe's arms trade link. The day after Balcombe Investments was formed it acquired a new set of directors based in the Channel Islands and employed by Portman Consultants. From then on Balcombe Investments was essentially a company of convenience which was used to register aircraft in Moldova.<sup>11</sup>

When contacted by the *Irish Examiner* and asked about illegal arms sales to Africa, a Renan spokesman said: "Balcombe Investment have some aircraft. We transport cargo world-wide, they [Balcombe] are the owners and we [Renan] are the operators. It is an offshore company, so they [Balcombe] acquire some aircraft and register it in the Republic of Moldova."<sup>12</sup>

In June 2003 the EU adopted a Common Position on Arms Brokering, under which EU states are now required to "take all the necessary measures to control brokering activities taking place within their territory." (See main AI report for more details). However despite the EU Common Position and despite the cases of Irish involvement in brokering and transportation, the Irish government has still not introduced legislation to control the activities of arms brokers or shippers. Amnesty International remains concerned that such a lack of controls means that unscrupulous arms brokers could operate from Ireland to supply arms to countries under UN sanction or where they are used to commit serious human rights violations.

## **Brokering of electric shock weapons**

Amnesty International has warned governments since 1997 about the uncontrolled international spread of the trade and misuse of electro-shock stun guns and batons. Human rights and torture rehabilitation organisations have described the electric shock baton as "the universal tool of the modern torturer". Between 1990 and 2003, Amnesty International documented electro-shock torture in 87 countries.<sup>13</sup>

Certain states in Europe have attempted to rigorously regulate the trade in electro-shock stun weapons and, in January 2003 the European Commission published a draft Trade Regulation to introduce EU wide export controls on stun weapons. Unfortunately the Trade Regulation appears to have been 'buried' in committee within the EC. Despite calls from Amnesty International to make the implementation of the EC Trade Regulation a priority during the Irish Presidency of the European Union, little seems to have been achieved.

As well as banning the trade in remote controlled electro-shock belts, the EC Trade Regulation would introduce consistent export controls on stun weapons across all EU countries. The EC Trade Regulation would also require EU Member States to introduce controls on EU companies who broker deals of such equipment. Ireland does not currently have any export controls on the brokering of electro-shock weapons and so Irish companies can legally broker deals for such weapons.

Amnesty International has discovered links between an Irish-registered company, and a London sales office, which also lists an "office" address in Cambodia, who are offering for sale the "Cellular Phone Type Stun gun"<sup>14</sup>. The actual stun gun is manufactured by the Motedo Co Ltd / O-Start R&D Corporation in Taiwan.<sup>15</sup> Despite the UK introducing a ban on the brokering of electro-shock weapons from the 1st May 2004 because of the lack of Irish export controls on brokering, if any Irish firms were involved in brokering electro-shock weapons they would not be breaking any Irish law.

### 3. Ireland – Dual-use components

The export of MSP components<sup>16</sup> is an increasing part of the global arms market. Since the end of the Cold War, major changes have occurred within the arms industry, both globally and within the EU. The industry has undergone wholesale restructuring, leaving it more diversified and internationalised than before.

Because of the increasing importance of high-tech electronic systems to both military and police forces, many components or sub-systems are now considered to be strategic goods that need to be controlled and are normally classed as dual-use and licenced under the agreed “Wassenaar” dual-use list rather than the “military list”. Many EU companies not normally associated with the conventional military or “bombs and bullets” production have significant involvement in the high-tech “dual-use” sector. For example, a recent report on Ireland identified that whilst Ireland’s “military” exports in 2002 were only valued at €34 million the “dual-use” exports [which includes components] were valued at €4.5 billion. [Emphasis added].<sup>17</sup>

Clearly, components present a major challenge for national export-control systems,<sup>18</sup> not least because many different countries are often involved in the manufacture of a single weapons system. Components are also likely to be less visible in the final product, making it much harder to monitor whether or not such items have been misused.

The Irish Department of Enterprise, Trade and Employment (DETE) is the department responsible for the administration of the export licensing system in Ireland. Following Amnesty’s report published in 2001,<sup>19</sup> Tom Kitt (Minister of State at the Department of Enterprise, Trade and Employment) stated in the Dáil that:

“I have noted the recent Amnesty report titled, *Ireland and the Arms Trade - Decoding the Deals*. From the outset, I wish to reject totally the suggestion in the report that my Department’s export-controls system is designed to frustrate parliamentary scrutiny and careful attempts to discover the level and extent of exports of controlled goods. The Department operates one of the more transparent systems of reporting within the European Union. This was clearly recognised by a partner organisation of Amnesty - Saferworld. In a 2000 report entitled, *Transparency and Accountability in European Arms Exports Controls*, Saferworld concluded that, with regards to dual-use exports, the Irish system allows the greatest level of transparency, with the publication of monthly statistics on the Internet.”<sup>20</sup>

Following Amnesty’s report, the DETE did make some improvements to the export licence information published on its website. However, the DETE website has not published any data on dual-use export statistics since November 2002 and Amnesty International is concerned that the lack of timely information prevents adequate parliamentary and public scrutiny.<sup>21</sup>

Whilst the Minister’s statement correctly identifies that the DETE provides more details for dual-use export licences than most other European governments, it fails to address the fact that the level of information provided still does not enable the Irish public or their elected representatives in the Dáil (as well as Amnesty International or other concerned parties) to establish whether the Irish government has authorised the export of dual-use components or systems for incorporation into military systems that were ultimately destined for countries where they have facilitated human rights abuses.

Since January 2002 the DETE website on dual-use export statistics has included a section entitled “End-use of Item” (See table overleaf).

## Dual-use export licences granted by the DETE (Ireland) – November 2002<sup>22</sup>

Control List no	Description of Item	End-Use of Item	Licensable Destination	No of licences issued
3A001a7	Integrated Circuits	Civilian	CHINA	34
3A001a7	Integrated Circuits	Civilian	HONG KONG	11
3A001a7	Integrated Circuits	Civilian	INDIA	6
3A001a7	Integrated Circuits	Civilian	REPUBLIC OF KOREA	1
3A001a7	Integrated Circuits	Civilian	TAIWAN	31
3A001b6	Microwave Assemblies	Civilian	CHINA	1
5A001a1	Cryptographic Hardware	Civilian	REPUBLIC OF KOREA	1
5A002a1	Cryptographic Hardware	Civilian	CHINA	1
5A002a1	Cryptographic Hardware	Civilian	SAUDI ARABIA	2
5A002a1	Cryptographic Hardware	Civilian	SOUTH AFRICA	2
5A002a1	Cryptographic Hardware	Civilian	TAIWAN	1
5A002a1	Cryptographic Hardware	Civilian	TURKEY	1
5D002c1	Cryptographic Software	Civilian	CHINA	4
5D002c1	Cryptographic Software	Civilian	SAUDI ARABIA	2
5D002c1	Cryptographic Software	Civilian	SOUTH AFRICA	1
5D002c1	Cryptographic Software	Civilian	UNITED ARAB EMIRATES	1
5E002	Cryptographic Technology	Civilian	CAYMAN ISLANDS	1
5E002	Cryptographic Technology	Civilian	INDIA	1
5E002	Cryptographic Technology	Civilian	MEXICO	6
5E002	Cryptographic Technology	Civilian	PUERTO RICO	1
5E002	Cryptographic Technology	Civilian	REPUBLIC OF KOREA	2
5E002	Cryptographic Technology	Civilian	SINGAPORE	1
5E002	Cryptographic Technology	Civilian	ST VINCENT & GRENADINES	1
5E002	Cryptographic Technology	Civilian	ST. LUCIA	1
5E002	Cryptographic Technology	Civilian	TAIWAN	1
5E002	Cryptographic Technology	Civilian	UNITED STATES	1
Total Export Licence authorisations:				116

Whilst the DETE took a positive step to include such “end-use” information, the fact that all dual-use licences issued since January 2002 were listed as “civilian” in the “end-use of item” seems strange given the increasing number of Irish companies who are manufacturing or supplying “dual-use” components for incorporation into military or security systems.

The following examples illustrate some of Amnesty International’s concerns with regard to the parliamentary reporting of the end-use destinations for dual-use components authorised for export by the Irish government.

### DDC: “This Data Bus is the life line of the aircraft”

The U.S. Data Device Corporation (DDC) which has production facilities in Cork, Ireland (DDC Ireland Ltd) states on its website that its MIL-STD-1553 Data Bus products are used in the AH-64 Apache Attack Helicopters.<sup>23</sup> The company information describes the important role that their product plays in enabling military aircraft and helicopters to function, they state that “a MIL-STD-1553 Data Bus allows complex electronic subsystems to interact with each other and the on-board flight computer. **This Data Bus is the life line of the aircraft**” [emphasis added].<sup>24</sup>

These systems can include a lethal array of armament, including a mix of up to 16 Hellfire missiles or 76 70mm aerial rockets and 1,200 rounds of 30mm ammunition for its M230 Chain Gun automatic canon.

Amnesty International has vigorously opposed the transfer of AH-64 Attack Helicopters from the United States of America to both Israel and Turkey because of serious concerns regarding human



rights violations. Press reports in March 2004, described how 14 people were killed in raids by the Israeli army on two refugee camps in Gaza. The Israeli forces were reported to have used “at least two Apache helicopter gunships hovering overhead, [which] advanced slowly along alleys and side streets on the fringes of the Bureij and Nusseirat refugee camps.”<sup>25 26</sup>

Amnesty International continues to oppose the transfer of Apache helicopters to Israel and would oppose the export from Ireland of components or sub-systems that would enable those weapon systems to function, particularly components that were described as “the life line of the aircraft”.

At present it is still not known whether DDC Ireland is supplying Military Standard Data Bus components for incorporation into Apache attack helicopters. In 2001, to establish whether export licences were being granted for this type of product, Amnesty International asked the Irish Department of Enterprise, Trade and Employment: “What export control category code would apply to MIL-STD 1553 Data Bus products from DDC Ireland Ltd?”. In response, the Minister for Labour, Trade and Consumer Affairs, Mr Tom Kitt T.D, stated in a letter that “the question of the appropriate control category code (which should apply to any product), is in the first instance a matter for the producer/exporter to determine as they have the best knowledge of their own products. Therefore, if you wish to know the control category code of any product, I would suggest that you contact the producer”.<sup>27</sup> Amnesty has written to both DDC Ireland Ltd and DDC (USA) in 2001 but to date has still not received an answer.<sup>28</sup>

Even if Amnesty or Irish parliamentarians could establish the category of dual-use licence that would be required if DDC were exporting its MIL-STD 1553 Data Bus products from Ireland, it would be of little use if these components were going first to the USA for incorporation into the Apache attack helicopters prior to shipment to another country. Since April 2001 the introduction of the EU “Community General Export Authorisation” has meant that the “bulk of the dual-use items subject to export licensing requirements are not subject to individual export control” when destined for the following countries: Australia, Canada, Czech Republic, Hungary, Japan, New Zealand, Norway, Poland, Switzerland, United States of America.<sup>29</sup> Thus exports of this category of “dual-use” component can be exported from Ireland and will not be reported in the current DETE licence statistics.

So there would appear to be nothing to prevent the export of the DDC Data Bus from Ireland to the U.S. for incorporation into Apache attack helicopters destined for Israel or other countries.

Amnesty International remains concerned that this lack of parliamentary reporting and transparency applies to exports of such components to the 10 states included in the CGEA. Amnesty International also has concerns that where the “end-use of item” information is listed as “civilian” that this relates to the supply of components to “civilian” companies who incorporate the components into military systems.

Amnesty International believes that the current level of detail in the information that the Irish government makes available does not allow effective parliamentary or public scrutiny.

## **Analog Devices: SHARC Digital Signal Processing components**

Analog Devices Inc (ADI) is a worldwide company with manufacturing facilities in Limerick, Ireland. ADI manufactures a wide range of electronic components and sub-systems, particularly for the Digital Signal Processing market. These DSP components have a wide range of applications within both the civilian, aerospace and defence markets. One of Analog Device’s key Digital Signal Processing products is the range of SHARC processors.

The exact dual-use licence category code for the SHARC and TigerSHARC devices is unknown to Amnesty. Previously, when Amnesty sought information from the DETE regarding the dual-use category codes for specific types of dual-use equipment it was told to ask the company.<sup>30</sup> The companies seldom oblige.

This lack of transparency is the first hurdle to effective parliamentary or public scrutiny. If we cannot understand what has been licenced we cannot examine where it has been exported.

Examination of the dual-use lists suggest that the two category codes, 3A001a2<sup>31</sup> or 3A001a7<sup>32</sup> may be the ones used to control the export of the SHARC components. The table below shows the individual export licences<sup>33</sup> granted by the DETE for the 3A001a2 category between 1998 and 2002.

**Individual export licences granted for 3A001a2 dual-use goods 1998 - 2002**

Country	1998	1999	2000	2001	2002	Total
China	1	1			1	3
Hong Kong		1	1			2
India		1				1
Iran				1		1
Israel					4	4
Malaysia		1				1
Republic of Korea		2				2
Singapore		1				1
Sudan				1		1
Taiwan		2				2
Turkey		1				1
United Kingdom		1				1
United States		1				1
	1	12	1	2	5	21

For the 3A001a7 dual-use category, the table below shows the Individual export licences granted between 2000 and 2002

**Individual export licences granted for 3A001a7 dual-use goods 2000 - 2002**

Country	2000	2001	2002	Total
China	1	1	8	10
Colombia		1		1
Hong Kong	1		3	4
India	1		4	5
Israel	1	1	5	7
Lebanon	1			1
Malaysia	1		1	2
Philippines			1	1
Puerto Rico			1	1
Republic of Korea	1		3	4
Singapore	1		1	2
Taiwan	1	1	3	5
Thailand	1		1	2
Turkey	1			1
United Arab Emirates	1			1
Uruguay			1	1
Venezuela			1	1
	12	4	33	49

According to the DETE, in circumstances where an unusually large number of licences are required they will consider granting a Global licence to prevent the creation of an undue administrative burden for the exporter. This “global licence” lists specific countries to which a category of dual-use items may be exported. These licences are valid for a period of six months and are granted on the strict understanding that the exporter will comply with a number of conditions including that:

“Global licences and general authorisations are not granted for the export of military goods.”<sup>34</sup>

The following countries could also have received products within those categories via Global licences issued between 2000 –2002 that covered: Brazil, Bulgaria, Colombia, Czech Republic, Egypt, Estonia, Hungary, Israel, Jordan, Kazakhstan, Lebanon, Malaysia, Mexico, Philippines, Poland, Republic of Korea, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, Taiwan, Thailand, Turkey, UAE, Ukraine, United Arab Emirates.

In addition, the following countries could receive such dual-use goods via the EU Community General Export Authorisation (CGEA)<sup>35</sup> without the details being reported in the export licence statistics that the DETE currently makes publicly available, Australia, Canada, Czech Republic, Hungary, Japan, New Zealand, Norway, Poland, Switzerland, United States of America.

Although the DETE licence data has included an indication of the end-use of the dual-use items, Amnesty has concerns about the lack of transparency on such reporting. Defence-related companies in France, India, Israel, Netherlands, United Kingdom and the USA have all reported using SHARC or TigerSHARC products in a range of military electronic warfare or surveillance systems.

It is not clear to what extent end-use monitoring or checking of dual-use goods such as the SHARC processors is carried out to ensure that they are not exported to ‘civilian’ companies for incorporation into military or policing systems. The following examples highlight Amnesty International concerns that in some cases the ultimate end-users are military systems:

**France:** It was reported in 2000 that Thomson-CSF-Signaál (France) manufacture the Squire battlefield surveillance radar which uses a signal processing board that is equipped with seven Analog Devices SHARC digital signal processors. Signaal was competing for a Polish Army order for 10 units (selection expected in November) and for a Royal Saudi Border Guard order for five units. Four have already been sold to an undisclosed Middle East police force.<sup>36</sup>

**Israel:** In 1998, Elta Electronic Industries Ltd (ELTA) announced that it was producing the EPSP (ELTA’s Programmable Signal Processor) machine. This system incorporated about 290 Analog Devices SHARC digital signal processors. ELTA is already using the machine to support its development of radar and electronic-warfare systems.<sup>37</sup> Elta is one of Israel’s leading military electronics systems companies, specializing in radar systems, electronic warfare, communications, computers and digital signal processors. The Signal Processors Group designs and manufactures a comprehensive range of Commercial Off-the-Shelf (COTS) DSP products based on the Analog Devices Inc. SHARC DSP chip.<sup>38</sup>

The Analog Device SHARC processors have also been reported to be used in military systems by manufacturers in Poland, the Netherlands,<sup>39</sup> and the United Kingdom.<sup>40</sup>

It is clear that the Irish government has granted export licences for the 3A001a2 and 3A001a7 dual-use categories to a number of countries where civilian companies or “end-users” have publicly reported using SHARC processors in a range of military or police surveillance products.

It is not currently possible, from the information provided by the DETE, for the Irish parliament or for Amnesty International to establish whether such components have been authorised for export to countries for incorporation into military or police systems for use in that country (or for subsequent re-export to countries) to facilitate human rights violations by the ultimate end-user.

## 4. The growth in Irish manufacture of “dual-use” components

The growth in Ireland’s high-tech sector has seen an increasing number of companies producing dual-use components or software. According to the DETE export statistics all of the dual-use export licences issued since 2002 have been destined for “civilian” end-use. As well as the examples of DDC, and Analog Devices (previously discussed) there are a growing number of Irish-based manufacturers of dual-use components or systems who continue to announce their success in obtaining defence-related contracts. Amnesty International finds it difficult to reconcile these announcements with the Irish government’s claims that all dual-use export licences have been granted solely for “civilian” end-use.

Such companies include:

**Xilinx:** In 1994, it was reported that Xilinx (USA) had established a manufacturing operation in Ireland that would produce field-programmable gate arrays (FPGAs) as well as product development in the areas of IC design and software development. FPGA’s are a dual-use electronic component that have many uses in both the civilian and military sectors. In an agreement signed with the Industrial Development Authority of Ireland (IDA Ireland), Xilinx claimed that the new facility would require an investment of more than \$18 million from Xilinx and another \$8 million by the Irish government. In March 2003, Xilinx announced that it would open a new Euro 52 million facility in Citywest and that Ireland was to become its new European headquarters. The new facility would accommodate 500 new employees compared to the 340 that the company currently employed.<sup>41</sup>

Although Xilinx claimed in 1994 that the US company would continue to source wafers from its Japan and Far East foundries it was reported that Xilinx would “ship products directly to European customers from Ireland rather than from its San José facilities as it currently does.”<sup>42</sup> [Emphasis added].

Xilinx components have been reported to have been incorporated into a number of military systems produced by European manufacturers including the Mirador system (Netherlands)<sup>43</sup> and the Giraffe surveillance radar system (Sweden).<sup>44</sup> Other systems that have been reported to use Xilinx components have included:

**Unmanned Aerial Vehicles (UAV):** A 2003 report on the military use of UAVs for intelligence, reconnaissance and surveillance highlighted how such systems required ‘advanced performance’ and how such requirements were met by using the Xilinx Virtex II FPGA or multiple Analog Devices SHARC DSPs. The report detailed how the new generation of UAVs such as the Predator are armed with Hellfire missiles.<sup>45</sup>

**Xilinx in Military and Aerospace systems:** An undated Xilinx presentation claims that Xilinx products are incorporated into a range of military and aerospace systems including the Hellfire missile, Tomahawk missile, Apache helicopter and F-16 fighter.<sup>46</sup> The company presentation does not identify which Xilinx manufacturing facility produces the components used in these weapon systems but Amnesty International remains concerned that Xilinx components manufactured in Ireland are being authorised for export to third countries for incorporation into weapon systems that have facilitated human rights abuses.

**Iona Technologies:** It was reported in January 2003 that Iona, one of Ireland’s biggest technology firms, had increased its business conducted with the defence industries from 10 per cent to 15 per cent. Recognising the growing importance of the defence sector, last year Iona established a new subsidiary staffed only by US citizens to gain clearance to sell to the US Defence department. Iona specialises in software that links disparate computer systems together. This software is currently

being used in the firing mechanism for Tomahawk cruise missiles and by the US Army Tank Command for simulation research into battlefield exercises.<sup>47</sup>

**Farran Technology:** This company, based in Ballincollig, County Cork, designs and manufactures a wide range of millimetre-wave components and sub-systems.<sup>48</sup> Whilst these components have a range of civilian radar and aerospace uses the company also provides a range of components for Electronic Warfare (EW) purposes, including the components for L-band to Ka-band Narrow-band Sources, L-Band to Ka-Band Swept Sources, and the Ka-band Block Downconverter.<sup>49</sup>

## 5. Lack of export controls on “security” equipment

The Forfás Public Consultation Process Briefing Note published in September 2003 recognised that the current Irish export licensing system may not control the export, or brokering, of a range of “security” equipment. The Briefing Note states that:

“The export of MSP equipment may not be captured by military or dual-use lists, but may be used in the context of human rights abuses in other countries.”<sup>50</sup>

In March 2004, the Irish company Camo Surveillance which claims to be “Ireland’s Mail Order Surveillance Equipment Specialists” listed a range of friction-lock expandable batons and the Slapper – which was described as “a leather covered, weighted and flexible instrument, which is ideal for dissuading an attacker without doing too much permanent damage to bones.”<sup>51</sup>

The order form for these items listed two prices (inside the EU and outside the EU) and did not mention the need for any requirement for an export licence. Amnesty International checked with the DETE and was informed that an Irish company does not currently require a licence to export such “security” equipment.

However, Amnesty International has documented the misuse of batons and other striking weapons in cases of excessive use of force; deaths in custody; torture, and other cruel, inhuman or degrading treatment or punishment in at least 105 countries around the world in the past five years.

Much of this “security” or law enforcement equipment currently not controlled by Irish export controls is contained in the draft EC Trade Regulation. Amnesty International recommends that during its remaining time as President of the EU, that the Irish government works to ensure that the EC Trade Regulation is implemented.

## 6. PMCs / Mercenaries

The last decade has seen a marked increase in the use of private security or military companies by governments, companies and also inter-governmental organisations (IGOs) and even non-governmental organisations (NGOs) to provide security training, logistics support, armed security and, in some cases, armed combatants. Unfortunately Ireland, like the majority of EU governments, does not have adequate controls and reporting mechanisms to ensure that such personnel and expertise transfers do not facilitate human rights abuses.

In March 2004, newspaper reports claimed that Ireland's elite Army Rangers were being offered Euro 300,000 a year to work in Iraq for private security companies.<sup>52</sup>

The reports quoted an Army spokesman who "confirmed Irish troops, in particular soldiers with Army Ranger Wing (ARW) experience, were being sought by private companies."

Ireland should introduce legislation to control and monitor the activities of private providers of military, police and security services. Companies and individuals providing such services should be required to register and to provide detailed annual reports of their activities. Every proposed international transfer of personnel or training should require prior government approval. This should be granted in accordance with publicly available criteria based on international human rights standards and humanitarian law.

## 7. Licenced Production Overseas (LPO)

On 22nd June 2000, the Minister of State at the Department of Enterprise, Trade and Employment (DETE) was asked about the Irish government's views on licensed production. The response noted that there are no harmonised EU controls on licensed production agreements and went on to state that "while I have no reason to believe Irish companies avail of licensed production agreements to avoid our export controls system, I would, in principle, support the introduction of uniform controls on licensed production within the E.U."<sup>53</sup>

However in September 2003, the 'Briefing Note on the Public Consultation Process on Ireland's Export Licensing for Military and Dual-Use Goods' stated that: "Ireland has no specific controls in this area, although important activities associated with this issue are subject to control"<sup>54</sup>. Amnesty International is concerned at the lack of progress or political will from the Irish government on this issue.

Ireland has at least one company making extensive use of such LPO agreements. The Timoney Technology Group, based in Navan, County Meath, designs and develops a variety of armoured vehicles for military and commercial applications. Timoney's range of high mobility vehicles includes armoured personnel carriers, combat support vehicles, heavy transporters, and airport crash fire rescue vehicles.<sup>55</sup> The company's chief executive, Shane O'Neill, stated in January 2001 that 60 per cent of Timoney's sales currently went to the military, although he was hopeful that commercial sales would also increase.<sup>56</sup> Such diversification includes the contracts signed in 2000 to transfer technology to the Beijing Heavy Duty Truck Co in China for the manufacture of a new all-terrain, heavy-duty truck.<sup>57</sup> Amnesty International is at present unable to identify the end-user of these vehicles.

In September 2001, Timoney exhibited the Bushmaster troop carrier, built by its Australian licensee ADI Ltd at the UK Defence Systems Equipment International (DSEI) exhibition, for the first time outside Australasia. ADI recently won a contract from the Australian government for 350 armoured troop carriers. Whilst Amnesty International has no present concerns regarding the use of such vehicles by the Australian military, the fact that an Australian licensee is now manufacturing and marketing this vehicle to governments - particularly in the Asia Pacific rim - is of potential concern.<sup>58</sup>

Timoney design technology was also on display as part of the prototype Terrex AV8I armoured fighting vehicle that was exhibited for the first time at DSEI 2001. This vehicle is the product of collaboration between Timoney Technology Ltd and the Singapore company, ST Kinetics. Shortly after the exhibition, ST Kinetics<sup>59</sup> announced that it would take a 25% shareholding in Timoney Holdings Ltd, the parent company for Timoney Technologies.<sup>60</sup>

It was also announced in October 2003 that ST Kinetics and Turkey's Otokar Otobus Karoseri Sanayi AS (Otokar) had concluded co-operation agreements for two vehicles aimed at meeting the requirements of the Turkish Land Forces Command (TLFC). The first agreement involved development of an enhanced variant of the ST Kinetics Terrex infantry fighting vehicle. The Turkish version of the Terrex, to be called the Yavuz, involves joint design, manufacturing and marketing.<sup>61</sup>

Thus it would appear that Timoney's technology, licensed to ST Kinetics, may well be used in the production of a range of vehicles for the Turkish military, who in the past have used such equipment to facilitate human rights violations. At the Kurdish New Year celebrations in March 2002 in Mersin, for example, Mehmet Sen was killed by a tank that crushed him against a wall.<sup>62</sup> Unless the Irish export controls are rapidly changed, it is likely that this will take place with no debate or authorisation from the Irish government or parliament. The Irish parliament has literally no idea of the number and scale of such agreements. The table below shows the export licences granted for the "military list" category ML6 which covers the type of armoured vehicles that Timoney designs.



**Irish Export licences issued for ML6 category. 2000 – 2003**

Export Licence category	2003	2002	2001	2000
Nigeria		1		
Northern Ireland		1		
Serbia & Montenegro	2			
Singapore	2	3		
Switzerland	1			
Taiwan		1		
UK	1	1	1	
United States	1	3		

If Irish parliamentarians relied solely on the information gained from export licences issued, they would get a limited and highly misleading picture of Irish involvement in the manufacture of armoured vehicles and the possible impact on human rights.

# Conclusion

Amnesty International believes that the examples outlined in this report show that Ireland cannot say with any certainty that exports of military and security equipment from Ireland are not contributing to the abuse of human rights around the world. The flaws in the Irish export control system that must be addressed as a matter of urgency if the claim that human rights are at the heart of the Irish government's foreign policy is to be seen to have any credibility.

The failure to create a truly effective export control system is a problem across the EU, including the new Accession States. Amnesty International has analysed the extent of the weaknesses in the system across Europe in the report, *Undermining Global Security – The European Union's Arms Exports*, which illustrates the dangerous complacency regarding the effectiveness of the current export control system and sets out clear recommendations for dealing with the issue.

Ireland with its partners in the international community has an opportunity to address the problem in the context of the current Review of the EU Code of Conduct. Ireland must take a stand in favour of a strong, legally-binding system and in addition should declare its support for the proposed Arms Trade Treaty as providing the essential legal framework for such a system.

## Footnotes

1. <http://www.foreignaffairs.irlgov.ie/policy/hr/hreolas.asp>

2. <http://www.entemp.ie/trade/export/faqs.htm>

3. Amnesty International, 2001, *Ireland and the Arms Trade : Decoding the Deals*

4. The Department of Enterprise, Trade and Employment provides statistics on the number of licences issued for the export of military goods. Does this not conflict with the often quoted statement that "Ireland is not a producer of arms"?

Ireland is not a producer of arms in the normal sense of the word. In an economy such as ours with its high technology base, goods will be manufactured and exported which have both civilian and military applications ("Dual-Use goods") and even a small number that have purely military application. Some of the high tech material produced here could, if it fell into the wrong hands, be used in the development, production or delivery of weapons of mass destruction.

Exports of military goods and of controlled Dual-Use goods are only authorised following careful case-by-case examination of their consistency with our international obligations and foreign policy objectives.

[www.entemp.ie/trade/export/faqs.htm](http://www.entemp.ie/trade/export/faqs.htm) April 2004.

5. Arms Trade. 164. Mr. Naughten asked the Minister for Foreign Affairs if he would make a statement on the Amnesty International publication, *Ireland and the Arms Trade - Decoding the Deals*. [21116/03]

Minister for Foreign Affairs (Mr. Cowen): The Amnesty International publication entitled, *Ireland and the Arms Trade - Decoding the Deals*, raises a number of issues relating to the export control system in Ireland. The Department of Enterprise, Trade and Employment, which operates the export control system, asked Forfás in July 2002 to review Ireland's export licence system with a view to recommending how best we can modernise and strengthen export controls to ensure full compliance with Ireland's international obligations. [www.irlgov.ie/debates-03/1Oct/Sect7.htm](http://www.irlgov.ie/debates-03/1Oct/Sect7.htm)

See also Fitzpatrick Associates, June 2003, *Export Licensing for Military and Dual-Use Goods*, and Forfás, September 2003, *Exporting Licensing for Military and Dual-Use Goods*. Public Consultation Process Briefing Note.

6. Dáil Debate 6 November 2001. [www.gov.ie/debates-01/6nov/sect6.htm](http://www.gov.ie/debates-01/6nov/sect6.htm)

7. Forfás, September 2003, *Export Licensing for Military and Dual-Use Goods*. Public Consultation Process Briefing Note.

8. Report of the Panel of Experts Appointed Pursuant to UN Security Council Resolution 1306 (2000), Paragraph 19 in Relation to Sierra Leone. December 2000

9. *Against the People, For the Resources: The need for stronger enforcement of UN timber sanctions and prevention of plunder*, A Briefing

document by Global Witness, September 2003.

Purchase contract between Limad AG and China National Aero-Technology Import and Export Corporation, undated. Fax correspondence between Minin's company Limad and the China Aerospace Mechanical and Electrical Corporation (CASC), documents an interest in 'liquid-based rocket engines', Fax from Limad Beijing to Limad AG, 5 November 1999.

10. <http://archives.tcm.ie/irishexaminer/2002/02/08/story22701.asp>

See [www.micro-surveillance.com](http://www.micro-surveillance.com) [www.microeye.ie/vngate.htm](http://www.microeye.ie/vngate.htm) [www.microeye.ie/nv/homevn.htm](http://www.microeye.ie/nv/homevn.htm) and [www.microeye.ie](http://www.microeye.ie)

11. Balcombe was dissolved in 2000.

12. <http://archives.tcm.ie/irishexaminer/2002/02/08/story22701.asp>

13. See Amnesty International, *The Pain Merchants*, December 2003, (AI Index: ACT 40/008/2003) for further details of electroshock torture throughout the world.

14. <http://www.micro-surveillance.com> Phone Number In UK. Tel: +44-020-8202-4777 (UK Office) See also [www.micro-surveillance.com](http://www.micro-surveillance.com) [www.microeye.ie/vngate.htm](http://www.microeye.ie/vngate.htm) [www.microeye.ie/nv/homevn.htm](http://www.microeye.ie/nv/homevn.htm) and [www.microeye.ie](http://www.microeye.ie)

15. [www.motedo.com.tw](http://www.motedo.com.tw)

16. Components include subsystems, electronics, software, production equipment and technology, and engines – anything that is not a complete or finished weapons system, a weapons platform, a weapon, or ammunition. Components also include spare parts and upgrades of equipment already in service

17. Export Licensing for Military and Dual-use goods, June 2003, Fitzpatrick Associates, p24. [www.entemp.ie/tcmr/finalreport.pdf](http://www.entemp.ie/tcmr/finalreport.pdf)

18. For a detailed analysis of the deficiencies of the UK control of MSP components see: *Lock, Stock and Barrel*, February 2004.

19. Amnesty International, 2001, *Ireland and the Arms Trade: Decoding the Deals*.

20. Dáil Debate 6 November 2001: Arms Trade: 150. Mr. J. O'Keefe asked the Tánaiste and Minister for Enterprise, Trade and Employment if she had read the recent Amnesty Report, *Ireland and the Arms Trade*; her views on the situation outlined in the report; and if she will implement the recommendations outlined in the report. [www.gov.ie/debates-01/6nov/sect6.htm](http://www.gov.ie/debates-01/6nov/sect6.htm)

21. Previously the DETE would have been congratulated on its very timely publication of export licence data but they seem to have stopped providing any information on their website after November 2002. Amnesty understands that the delay in providing more up to date information is due the lack of staffing resources.

22. <http://www.entemp.ie/export/dunov02.htm>

23. 'Data Device Corporation does over three quarters of its US business in the military sector.' *Sunday Tribune* 29/1/90. Military and space parts maker sets up in Cork.

24. [www.ddc-web.com/applications/mil\\_app.shtm](http://www.ddc-web.com/applications/mil_app.shtm) 2/2001. Military Aircraft, such as the F-16 Fighting Falcon, C-130 Hercules Transport, B-1 Bomber and the AH-64 Apache Attack Helicopter, utilize DDC's MIL-STD-1553 Data Bus products.

25. *The Independent*, March 8, 2004, 'Fourteen die as Israeli Tanks and gunships raid Gaza Refugee camps.'

26. 'Use of U.S planes draw nnger'. *Washington Times* 22 May 2001

27. Letter from Department of Enterprise, Trade & Employment to Amnesty International Irish Section 3 July 2001.

28. However, a 2001 Press release from DDC UK Ltd announcing that DDC and the Israeli company, Ampol Technologies, would be combining efforts to transform DDC's existing line of MIL-STD-1553 and ARINC-429 Data Bus interface cards into enhanced, COTS (commercial off the shelf) turnkey solutions for communications and avionics systems - beginning with the integration of DDC cards and Ampol's field-proven dataMARS and dataSIMS software suite stated that "DDC has its European Headquarters in Newbury, UK, a manufacturing plant in Cork, Ireland, and sales offices in Germany and France." which suggests that the MIL-STD-1553 data bus manufacturing is undertaken in Ireland.

DDC and Ampol in avionics comms test alliance, 7 May 2001, [www.electronicstalk.com/news/ddc/ddc100.html](http://www.electronicstalk.com/news/ddc/ddc100.html)

29. Written answer on Wednesday, 11th February, 2004, Ref No: 4215/04
30. Letter from Department of Enterprise, Trade & Employment 3 July 2001.
- “What export control category code would apply to MIL-STD 1553 Data Bus products from DDC Ireland Ltd?” In response, the Minister for Labour, Trade and Consumer Affairs, Mr Tom Kitt T.D, stated in a letter to Amnesty International that “the question of the appropriate control category code which should apply to any product, is in the first instance a matter for the producer/exporter to determine as they have the best knowledge of their own products. Therefore, if you wish to know the control category code of any product, I would suggest that you contact the producer”.
31. “Microprocessor microcircuits”, “microcomputer microcircuits”, microcontroller microcircuits, storage integrated circuits manufactured from a compound semiconductor, analogue-to-digital converters, digital-to-analogue converters, electro-optical or “optical integrated circuits” designed for “signal processing”, field programmable logic devices, neural network integrated circuits, custom integrated circuits for which either the function is unknown or the control status of the equipment in which the integrated circuit will be used is unknown, Fast Fourier Transform (FFT) processors, electrical erasable programmable read-only memories (EEPROMs), flash memories or static random-access memories (SRAMs), having any of the following: [www.entemp.ie/export/cat3.pdf](http://www.entemp.ie/export/cat3.pdf)
32. 7. Field programmable logic devices having any of the following:
- An equivalent usable gate count of more than 30 000 (2 input gates);
  - A typical "basic gate propagation delay time" of less than 0,1 ns; or
  - A toggle frequency exceeding 133 MHz; ([www.entemp.ie/export/cat3.pdf](http://www.entemp.ie/export/cat3.pdf))
33. An individual export licence is normally valid for 12 months. A Dual-Use licence or a military licence may cover several consignments of a specific good to the consignee/end-user specified on the licence.  
[www.entemp.ie/publications/trade/2001/exportcontrolguide.htm](http://www.entemp.ie/publications/trade/2001/exportcontrolguide.htm)
34. A Global licence is valid only for the items and destinations listed - Dual-Use items and destinations not listed are subject to individual licensing requirements: (1) a global licence is valid for a period of six months; (2) an exporter who has been granted a global licence must submit, on a three monthly basis, details of the consignees to whom the items listed on the licence were exported to. (3) Global licences and general authorisations are not granted for the export of military goods. [www.entemp.ie/publications/trade/2001/exportcontrolguide.htm](http://www.entemp.ie/publications/trade/2001/exportcontrolguide.htm)
35. The new EU Council Regulation introduces, for the first time, a Community General Export Authorisation (CGEA). Under the CGEA, any exporter may export dual-use items listed in Annex I to any or all of the 10 exempted countries (except items falling under entries 0C001, part of 0C002, 1A102, 7E104, 9A009a and 9A117, and software and technology insofar as these relate to 0C001 or those items of 0C002 that are excluded from Annex IV ) without the need to apply to DETE for individual global licences. Exports under the CGEA are subject to the catch-all clause as well as national registration and reporting requirements.
36. International Defence Review, 1 September, 2000. ‘Squire surveillance radar advances to production stage’.
37. International Defence Review, 01 April 1998, Defence Electronics and Computing, Israeli PSP System available as COTS products.
38. [www.vita.com/vmeprod/company/eltainfo.html](http://www.vita.com/vmeprod/company/eltainfo.html)
39. In 1999 the company Signaal was reported to have delivered the Mirador EO surveillance and fire-control system to the Venezuelan Air Force, which would operate it in a trailer mounted configuration capable of controlling up to three Otobreda twin 40mm gun mounts. This system utilised “a single board with six Analog Devices SHARC digital signal processors”. See International Defense Review, 01 September 1999, ‘Sharper set of eyes on the Sky: Ground-based air defense embraces optronic fire control’.
- It has been reported that the Mirador system has also been supplied to Bangladesh, Germany, Greece, and the Netherlands. See *Jane’s Navy International* - February 01, 2004, ‘Putting eyes on the target.’
40. In 2000, the Radstone Group announced that the (Digital Signal Processing) DSP area had seen the launch of the Vantegra product family, which utilises the latest Analog Devices Hammerhead SHARC processor. See *Jane’s Defence Industry*, July 01, 2000
41. The Vantegra-DL board, can accommodate up to 24 Analog Devices SHARC digital signal processors. Typical applications include radar, sonar and image processing. See International Defense Review, 01 August 1999, ‘Defense Electronics and Computing: Briefs – SHARC attack’.
41. *Europe Intelligence Wire*, March 13, 2003. Xilinx Names Ireland As European HQ.
42. *Electronic News*, March 14, 1994, Xilinx: new Irish unit to access Europe. (Xilinx Inc. facility in Dublin, Ireland to make

field programmable gate arrays and erasable programmable logic devices.)

43. *Jane's Defence Weekly*, Naval Forces Update, Signaal widens Fire-control product line, 16 October 1996. In 1996, Hollandse Signaalapparaten BV (Signaal) of the Netherlands announced that it had developed a new naval and battlefield electro-optic fire-control system, which was to be unveiled at the Euronaval '96 exhibition in Paris.  
  
The Mirador is a lightweight, compact, electro-optic multi-sensor system to control gun and fire-and-forget missile launchers on naval and coastguard ships and on the battlefield. As well as using the Analog Devices SHARC signal processors it was also reported that the Mirador system contained "three XILINX field-programmable gate arrays each having up to 14,000 gate equivalent capacity". [Emphasis added]
44. International Defense Review, June 01, 2001, Giraffe AMB soon to reach new heights. In 2001 it was reported that Ericsson Microwave Systems (Sweden) was developing a significant technology upgrade for its Giraffe AMB (agile multibeam) G-band air defense and surface surveillance radar product line. The company was reported to have switched to commercial hardware, including FPGAs supplied by Xilinx.
45. The UAV Reloaded: Placing Video Intelligence on-board.  
[www.cotsjournalonline.com/pdfs/2003/06/COTS06\\_specialfeature2.pdf](http://www.cotsjournalonline.com/pdfs/2003/06/COTS06_specialfeature2.pdf)
46. Xilinx in Military and Aerospace.  
Abrams, AGM-130, AIM9-X, ATIRCM, Bradley, Crusader, ALR-67, ALR-69, ALQ-131, Erints, Hellfire, Harpoon, HTI, IDECM, IRIS, AN/AQR-22A, ARSR-4, FLIR, LAMPS, LANTIRN, LOS, LOSAT, MHIP, MLRS, JSTARS, RAI, RUG, Patriot, Seawolf, SLAM, Standard, Stinger, Taurus, SCINS, AESA, HARM, THAADs, Tomahawk, TSIP, Falcons Edge, Roland, EWATS, IBAS, ITA, ALR-66.  
  
Communications, Signal Processing and Intelligence: ALADDIN, GPS, SINCGARS, TTC39, EPLRS, APSP, JTIDS, STU-11, UYK44, CORNFIELD, AYK14, KG47, TACJAM, MONO LAKE, HAYFIELD  
  
Aerospace, Avionics and Space: 737, A - 10, EUROFIGHTER, F-14, P - 3, 777, B - 52, FEDSAT, F - 15, RAFAEL, APACHE, B - 1B, F-16, HC-130, SKYBRIDGE, ARIANE 5, C17A, F-18, JSF, SPACE SHUTTLE, ATF (F-22), COMANCHE, F-111, OPTUS, TORNADO. [support.xilinx.com/products/milaero/MilAero.pdf](http://support.xilinx.com/products/milaero/MilAero.pdf)
47. [www.ireland.com/focus/iraq/features/fea12.htm](http://www.ireland.com/focus/iraq/features/fea12.htm)
48. <http://www.farran.com/>
49. [www.farran.com/index.php?sc=4](http://www.farran.com/index.php?sc=4)
50. Forfas, September 2003, Exporting Licensing for Military and Dual-Use Goods. Public Consultation Process Briefing Note.
51. [www.camosurveillance.com/other.htm](http://www.camosurveillance.com/other.htm) accessed March 2004.
52. *The Mirror*, Irish Edition, March 29, 2004, 'Rangers' Pound 300K Iraq Deal'.
53. [www.irlgov.ie/debates-00/22June/sect7.htm](http://www.irlgov.ie/debates-00/22June/sect7.htm) Arms Industry.
54. [www.entemp.ie/export/briefingnote.doc](http://www.entemp.ie/export/briefingnote.doc)
55. [www.army-technology.com/contractors/vehicles/timoney](http://www.army-technology.com/contractors/vehicles/timoney)
56. "The deals that link Ireland to war: The current boom in military spending is increasing sales by Irish-based technology firms to the defence industries. But are these sales being logged as military exports?" 18 January 2003  
<http://www.ireland.com/focus/iraq/features/fea12.htm>
57. [www.china.org.cn/english/1848.htm](http://www.china.org.cn/english/1848.htm) 9/2000: Irish Mission concludes landmark visit.
58. *Jane's Defence Industry*, 1 November 2001 IRELAND - Timoney Technology Ltd.'
59. <http://defence-data.com/dsei/pageds1044.htm>
60. *Jane's Defence Weekly*, 15 October 2003, 'Terrex infantry fighting vehicle moves ahead'
61. *Jane's Defence Weekly* 8 October 2003, 'Teams form for Turkish vehicle programmes'.
62. Amnesty International Urgent Action, 22 March 2002 (AI Index: EUR 44/019/2002). The police officer responsible was later acquitted.