MA in Translation Studies (ODL)

Module 1

Question LX/05/04

Discuss the ways in which neologisms and other compounds and complex English words provide problems for you as a translator. Choosing one or two texts from an English newspaper, or journal, explore the strategies you would use to deal with such words, and say how successful you think you can be.

Contents

1. Introduction

For the last two decades neologisms and complex words have been flooding the Greek military register. This wave has been the outcome of the procurement of high-tech military equipment for the Armed Forces. The efficient training on how to use this equipment requires the translation of English technical manuals and references full of newly coined items and complex words. The accurate and standardized translation is of utmost importance for the Greek military personnel that participates in international exercises and attends training schools.

In this assignment I will use an extract of an English military text to demonstrate the problems related with translating such words. First, I will outline various definitions of neologisms and the concept of equivalence at the level of word and multiword-item, proposing various strategies for translating them. Then, I will apply these concepts and strategies on the data text. Finally, I will assess the quality of the translation with the aid of corpora and special software.

2. Neologisms, compounds and complex words: definitions and related strategies

2.1 Neologisms

In 1975 the French lexicographer and terminologist Alain Rey set up a theoretical model, suggesting that

> '…, the neologism will be perceived as belonging to the language in general or only to one of its special usages; or as belonging to a subject-specific usage which may be specialised or general.' (Rey, 1975 cited in Yiokari, 2005: 3)

Nowadays, there seems to be a consensus that neologism is a word that expresses a novel concept either through coining a new vocabulary item or through attaching a new meaning to an already existing one (Bolinger and Sears, 1981; Collins Cobuild English Dictionary 1995; Newmark, 1995).

Neologisms pass through three stanges: creation, trial and establishment (Parianou & Kelandrias, 2002: 756). First, the unstable neologism is still new, being proposed or being used only by a limited audience; Epstein (2005) calls such a neologism **protologism** 'from Greek *protos*, first + Greek *logos*, word, by analogy with prototype

and neologism'. Then, it is diffused, but it is not widely accepted yet. Finally, it is stabilized and identifiable, having gained wide-spread approval; such a "stability" is indicated by its appearance in glossaries, dictionaries and large corpora. However, even the last stage may not be the final one; Sablayrolles (n.d.) proposes a scale of *neologicity*, pointing to the social acceptation of the neologism and its life span (from when to when?).

Niska (1998) draws on the concept of "translational creativity" to claim that

> 'neologisms are tokens of a creative process, "a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people, or circumstances of his life on the other."'

Such a **creativity** is especially evident in computing where the coiners of neologisms 'are not particularly aware of following [or breaking] any word-formation rules (*sic*)' (Jacqueline, 2001: 35). But the data text (Appendix A) calls for consistency which is more important than creativity (Silvia, 2001). Whereas Bauer acknowledges that both '**productivity** and creativity give rise to a large number of neologisms' (1983: 63) [my emphasis] he prefers the former because the unpredictable nature of the latter could not lead to worth-while generalizations. In other words, the creation of neologisms is a rule-bound process (Motsch, 1977).

Technical vocabulary is full of productive, or '**"motivated" terms**' (Dubuc, 1992 cited in Love, 2000), consisted of morphemes that allude to the signifier they designate. This allusion is made through the morphemes' etymology or meaning. He cites *leukemia*[1] [Greek *leukos* (white) + -*aimia* blood <haima] to highlight the desirability of such a motivation in coining neologisms.

Neologisms are frequently generated in the media, advertising and technical domains (Newmark, 1995; Allen, 2001; Parianou & Kelandrias, 2002; Korda-Sabba & Katsogiannou, 2002; Diamantis & Gousios, 2002), being described as a 'response to a particular need' (Newmark, 1995; Parianou & Kelandrias, 2002); e.g. the need to create the (now lexicalized) neologism PC (Personal Computer) arose no sooner than the product-computer became available to the average consumer.

[1] A type of cancer characterized by the abnormal growth of white blood cells.

Silvia (2001) differentiates between '**morphological neologisms**' (cf. 2.2.2), created through

- **derivation**
- **compounding**
- **blending**
- **acronymy**
- **borrowing**,

and '**semantic neologisms**', resulted from

- **expansion:** extension of the meaning of a term by giving it a new meaning (i.e. a shift from the concrete to the abstract or from the abstract to the concrete)
- **metaphor:** 'the process whereby a word or expression is used to refer to something other than what it was originally applied to, or what it 'literally' means, in order to suggest some resemblance between the two things' (Coulthard et. al. 2000: 100); e.g. computer's *master* (and *slave*) hard disk)
- **conversion of grammatical category** (cf. 2.2.2)
- **adoption from another subject field:** e.g. the virology term *virus* adopted in the field of computer security.

For the purposes of this assignment, any "item" (cf. 2.2.1) that is not included in the "Reference Corpus" (Appendix C) or it has just entered the Greek military register and pass through the establishment stage will be considered as a neologism. Next section covers the strategies to be used to translate neologisms.

2.1.1 Strategies for neologisms

Picone (1996) proposes three strategies for translating English neologisms in French that are frequently used by Greek translators: integral, semantic and structural borrowing. By analogy, the English element is accompanied by a new entity or concept in Greek; an existing Greek element shifts, extends or becomes restricted in meaning; the Greek element imitates the English structure by creating innovative morphosyntactic forms.

Also, of Greek interest are Niska's (1998) strategies: using a near equivalent (a more general (**superordinate**) or more specific (**hyponym**) word) in the TL; providing an explanation '*FR "le baccalauréat" - EN "the French secondary school leaving examination*"'; and loan translation, where the elements of the word are directly translated into the borrowing language 'SV "*folkhögskola" - EN "folk high school*"'.

Additionally, Baker proposes the 'translation by illustration' (1992: 26-42) (cf. 3) which could keep the text short, concise and to the point.

In summary, the strategies to deal with neologisms are[2]:

- **near equivalent** (SN 1);
- **explanation** (SN 2)
- **loan translation** (SN 3)
- **standard/recognized translation**. (SN 4)

The letters in brackets (SN 1,2,3,4) are my references for the ensuing analysis.

The need to use combinations of these strategies is apparent in the next section that deals with complex and compound words, when these incorporate neologisms.

2.2. Compound and complex words

2.2.1 Definitions of "word" and "multi-word" items

Henceforth, by the item "**word**" is meant any orthographic representation of a string of letters, including hyphens, the word boundary being a space on either side.

The items considered have been chosen according to their overall referential contribution (Baker 1992: 64). For example, in *Light Thermal Weapon Sight* (Appendix A, Fig.7), the constituent part '*weapon sight*' will not be considered as a separate item because its meaning is incorporated in the sum of the meanings of the multi-word as a single unit.

The subdivision of multi-words into their "**semantic units**" (shown in bold square brackets **[ ]**) requires a functional analysis of grammar which describes most nominal groups as being headed. According to Katamba

> "In English the head is normally the item on the right hand side of the compound. The syntactic properties are passed on to the entire compound....the syntactic head is also the semantic head of the compound. The non-head element in the compound specifies more narrowly some characteristics of the head. (*sic*)" (1994: 73).

In the nominal phrase *aircraft ground support equipment*, the semantic/syntactic **head** is **[**equipment**]** and the non-head element is **[***aircraft***]** + **[***ground support***]**. Though the

[2] Newmark (1995: 150) subdivides these categories by including strategies such as translation through *functional term*, *descriptive* term, and *TL neologism*.

unit *support equipment* is valid, here *ground* is a classifier of *ground*; the unit **aircraft ground* is definitely invalid. A key concept in the analysis of these **polywords** is that they tend 'to be internally stable…but positionally mobile' (Lyons, 1968: 203).

2.2.2 Compounds and complex words

Bauer defines compounds and complex as forms where 'two or more elements, which could potentially be used as stems, are combined to form another stem' (1983: 28). Stems, or **morphemes**, are classified as **free** and **bound** (Coulthard *et.al*, 2000: 50-51). The word *impenetrability* consists of the bound morphemes, -*un* and -*ity*, and the free morphemes –*penetr*(ate) and –*abil* (able).

The main processes of **word-formation** are grouped together as follows (Coulthard *et.al*, 2000: 55-59):

- **Derivation:** affixes are combined with free morphemes.
- **Compounding:** two separate items (nouns, verbs, etc) are joined together to produce a new single item; e.g. the nouns *air* and *crew* form the noun *aircrew*.
- **Borrowing:** adoption of a foreign word as it is by the receiving culture; e.g. English has borrowed the Arabic word *alcohol*.
- **Back-Formation:** the process where a word changes its word class by removing an affix from its root; i.e. *televise* from *television*.
- **Acronyms:** words produced by combining the initial letters of the words in a phrase; i.e. *NATO* from 'North Atlantic Treaty Organization' is pronounced as a single word.
- **Clipping:** another type of back-formation, known also as **abbreviation**; i.e. *medevac* from *medical evacuation*, suggesting a stylistic change (Bauer, 1983: 233).
- **Coinage:** invention of items of vocabulary which are semantically unanalysable, like *EXXON*.
- **Conversion:** a word changes its class; Bauer (1983: 229) draws our attention to four main types:
    - Noun-to-Verb — to attack
    - Verb-to-Noun — a strike
    - Adjective-to-Verb — to empty
    - Adjective-to-Noun — an inflatable

But the 'dividing lines' in morphology are not so clear (Bauer, 1983: 35-36). In *postman*, the form *-man* lost its connection with the 'adult male man' giving phrases such as 'Madam chairman'[3]; eventually, the lexeme '*-man* has become a suffix' (Quirk *et al*. 1972: 978).

Such a productivity is not unrestricted (Bauer, 1983). According to the requirement of existence, or **hypostatization**, the meaning of a compound is extracted from the meanings of its components; e.g. while *garbage man* and *snowman* do not denote, by analogy, the same referent (a man made out of garbage/snow), the former, in a certain context, is grammatically correct.

Blocking is the 'phenomenon of the non-occurrence of a complex form because of the existence of another form' (Aronoff, 1976 cited in Bauer, 1983: 87); e.g. the existence of the word *thief* blocks the formation of the word *stealer*. However, the following table suggests that blocking is also not unrestricted:

Old Form	Action	New Form
Screen	displays (images, information)	*displayer*
		imager

Also, Bauer (ibid. 170, 181) proposed '**The First Sister Principle**' (FSP), a restriction in the syntax of verbal compounds, where

> 'the first sister to the right of the verb is moved to the left of the verb by transformation and an affix is added on the right of the verb when the verbal compounds are generated.'

Thereby, the phrase 'the radar that finds the (direction of enemy artillery) fire' becomes *firefinder radar*.

Marchand (cited in Bauer, 1983) finds similarities between word-formation and **phrase-formation**. The term *submarine cable* is the collocation of the head *cable* and the modifier *submarine*. The reconstruction of the meaning of noun phrases is possible by identifying the head and contextual information (Lee, 1970 cited in Bauer, 1983: 160, 162); e.g. *plane pilot* refers to the pilot who flies the plane[4]; or through the **underlying verb** (Lee, 1960) being deleted on the way from the deep to the surface structure:

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[3] The feminist movement has had a great impact on such phrases providing alternatives, such as '*Chairperson'*.

[4] Vendler (1968 cited in Bauer, 1983: 160) is reluctant to adopt this strategy by quoting words such as *milkman* asking if it means the 'man who sells/delivers /handles/etc. milk'.

Possible underlying verbs of *submarine cable**		
The cable	*has*	the shape of a submarine
	forms	part of a submarine
	lies	under the surface of the water

**Term found in Γιαννούτσος, 1997.*

Roeper & Siegel (1978 cited in Bauer, 1983) demonstrate that in nominal phrases, such as *passive infrared seeker*, the adjective (*passive*) applies to the whole two-word compound and it is not an incorporated noun-phrase. Bauer (1983) observed that long compounds are analysable as combinations of two elements, each of which may in turn be compound, but the validation of such a generalization needs empirical study. Thouvenin (1996) is in tune by arguing that

> '**a macro-structure of two elements** with the grammatical functions of **modifier** and head could be isolated whatever the length of the nominal group.' [my emphasis]

Baker summarizes the difficulties in translating items above the word level (1992:54-70) as follows:

- *The engrossing effect of source text patterning*: the influence of the pattern of a TL multi-word on a SL one. (CT1);
- *Misinterpeting the meaning of a SL multi-word and a TL multi-word*: two multi-words denote the same but connote a different referent, because of similar form but different contextual use. (CT2)
- *The tension between accuracy and naturalness*: the need to render the meaning of a SL multi-word slightly differently for the sake of its accuracy and naturalness in the TL. (CT3)
- *Culture-specific multi-words*: they reflect the cultural setting in which they occur and which may be quite different to that in TL. (CT4)
- *Marked multi-words in the ST*: items whose unusual combination of words is difficult to be marked; in the TL. (CT5)

The letters in brackets (CT (*Compound-Complex Term*) 1,2,3,4,5) are my references for the ensuing analysis.

2.2.3 Strategies for compounds and complex words

Newmark proposes a translation-oriented **Componential Analysis** where

> 'the basic process is to compare a SL word with a TL word which has a similar meaning, but is not an obvious one-to-one equivalent, by demonstrating first their common and then their differing sense components.' (1995: 114)

The morphology of Greek language blocks the accumulation of modifiers before the head of nominal groups. Translators usually allocate them on either side of the head (Ksudopoulos, 2002: 746) [**modifiers-allocation type**].

Baker (1992: 71-78) proposes the following strategies for translation problems of equivalence:

- **Using an item of similar meaning and form:** it conveys roughly the same meaning as that of the SL and consists of equivalent lexical items (e.g. superordinates, hyponyms, more neutral/less expressive words). (SC1)
- **Using an item of similar meaning but dissimilar form:** like before but the item consists of different lexical items. (SC2)
- **Translation by paraphrase:** expressing the meaning of an item in other words because no match can be found in the TL or because of differences in stylistic preferences of the SL and TL (e.g. using a loan word or loan word plus explanation). (SC3)
- **Translation by omission:** a component of the word might be omitted in the TL because it is compensated somewhere in the text, it cannot be easily paraphrased or for stylistic reasons. (SC4)
- **Translation by illustration:** (cf. 3) (SC5)

The letters in brackets (SC (*Strategy for the Compound-Complex*) 1,2,3,4) are my references for the ensuing analysis.

3. The Text

The text deals with concepts and equipment that have just entered the Greek military register. It is a contemporary 330-word multimodal extract of the PEOBrochure (2005,

Feb) produced by the US Army office *PEO (Program Executive Office) Soldier*[5]. The text's '**context of situation**' (Halliday, 1978) is:

> **Field**: a specialized military text containing a proportionally high number of neologisms, compounds and multi-words. Military register is so standardized that there are no important differences between US and British English, at least as far as weaponry is concerned.
>
> **Tenor**: the readership is primarily the expert in military or/and in technical-electronics register and secondarily the educated reader. While the writer and the expert-military officer belong to the same 'power elite' (Mills, 1956 cited in Van Dijk, 1993: 303) that sets, plans and controls the military 'hierarchy of power' (Van Dijk, 1993: 303), the educated reader is excluded[6].
>
> **Mode**: an informative and multimodal (text and pictures) text; it promotes military equipment (with possible civilian applications) in an advertising-like way avoiding technical details.

The text's **multimodality** enables the uninitiated to visualize and comprehend complex terms. Multimodal analysis asks questions such as:

- 'is the principal carrier of the meaning the verbal or the visual element?';
- 'how are these modes orchestrated to produce meaning' (Snyder, 2001: 267).

My '**insider status**' (Taylor, 2001 cited in in Wetherell *et al.* 2001), as an active army officer, enables me to fix the boundaries of multi-word items (c.f. 2.2.1); this kind of knowledge is an invaluable asset (Delisle, 1984 cited in Pappa, 2002: 751; Korda-Sabba & Katsogiannou, 2002).

4. The intention of the translator

The translation should be ''**domesticated'** for the target audience' (Coulthard *et al.*, 2000: 31). The potential user of these products, the Greek soldier, should be able to

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[5] The extract consists of two parts: the introduction (lines 1-10) and the section 'Product and Manager Sensor and Lasers' (lines 11-17, including the images); the entire Brochure consists of so many neologisms, compounds and complex words that it is impossible to include them all in the present paper due to lack of space and time.

[6] My tutor had a problem to follow the analysis in some examples containing material of technical nature (personal communication).

relate them to their future operational use in the Greek environment. The translator should focus on the propositional meaning making the text as explicit as possible to avoid misunderstandings and achieve at the same time the desired standardization.

Unlike other special domains, e.g. the law where legal systems vary from country to country (Niska, 1998; Parianou & Kelandrias, 2002), technical military equipment will be used in the same way and for the same purposes no matter the final user.

5. Analysis

5.1 Neologisms

Example: 1 (line 7) (*all lines refer to Appendix A*)	*Type*: compounding, expansion	*Strategy*: SN1,3

Adj	**Noun**			
single	platform		*Translation*	**αυτόνομη πλατφόρμα**
	Head		*Back-translation*	autonomous platform

Platform is expanded to denote equipment's versatility; For instance, "air *platform*" refers to any flying machine. The soldier as an *autonomous* "war-machine" is as efficient as his modularity with other machines. *Πλατφόρμα* is a direct loan with the same propositional meaning in Greek.

Example: 2 (line 8)	*Type*: derivation	*Strategy*: SN3,4

Noun					
Morphemes					
Bound	**Free**	**Free**			
Prefix	**Adjective**				
	Verb	**Suffix**		*Translation*	**διαλειτουργικό**
inter	oper-(*ate*)	able		*Back-translation*	interoperable

Inter- designates equipment's characteristic to be operated by all three services Army-Navy-Air Force. Where it means *δι(α)*-, in the sense of 'relating two or more things, concepts, persons together', the free morpheme is translated as literally as possible; e.g. "Inter-net: δια-δίκτυο" "Inter-national: δι-εθνές" and "Inter-service: δια-κλαδικό. Interopearble is also a neologism in 'doctrinal and operational' terms. Recently, the Greek Armed Forces have undergone a phase of intense reorganization, transforming

and equipping their units so that they could operate more efficiently with each other than ever before.

Example: 3 (line 8)	*Type*: compounding, derivation	*Strategy*: SN1,2

Noun					
Morphemes					
Free	**Free**	**Free**			
Noun	**Adjective**				
	Noun	**Suffix**		*Translation*	**προσαρμόσιμο στις επιχειρησιακές ανάγκες**
mission	tailor	able		*Back-translation*	adjustable to the operational needs

The terms *operation* and *mission* are near synonyms in military register. The suffix *able* is attached only to *tailor* which usually collocates in the form "tailor + adj or verb". *Προσαρμόσιμο* (*adjustable*) conveys the meaning of *tailor* (*ράβω*) which in Greek is unmarked only for clothing. The addition of *ανάγκες* (*needs*) anchors *επιχειρησιακές* (*operational*).

Example: 4 (line 13)	*Type*: compounding, derivation	*Strategy*: SN3,4

Noun	**Noun**		**Noun**			
	Morphemes					
	Free	**Bound**				
	Verb	**Suffix**				
[image	intensif-(y)-	ication]	devices		*Translation*	**συσκευές ενίσχυσης εικόνων**
			Head		*Back-translation*	image intensification devices

The constituent parts are syntactically and semantically loan-translated in Greek.

Example: 5 (line 15)	*Type*: compounding	*Strategy*: SN 1

Classifier	**Noun**			
combined	image		*Translation*	**σύνθετη εικόνα**
	Head		*Back-translation*	compound image

The term refers to an image composed of two other images. This composition is conveyed in Greek with *σύνθετη* (*compound*).

Example: 6 (line 15)	*Type*: compounding	*Strategy*: SN 3

Noun		**Noun**			
Morphemes					
Free	**Free**				
Prep.	**verb**				
over	lay	imagery		*Translation*	**επικαλυπτική εικόνα**
		Head		*Back-translation*	overlapping image

A combined image where one image is placed on top of another one. This loan translation is still going through the trial and establishment stages.

Example: 7 (line 16)	*Type*: compounding, expansion	*Strategy*: SN2,3,4

Classifier	**Classifier**		**Adj**	**Noun**
	Morphemes			
	Bound	**Free**		
	Prefix	**Adj**		
Cooled	un	cooled	[thermal	sensors]
				Head
Translation	**θερμικοί αισθητήρες με ή χωρίς σύστημα ψύξης**			
Back-translation	thermal sensors with or without cooling system			

While *air/water-cooled* is loan-translated as *αερό/υδρό-ψυκτο*, the omission of air/water deactivates this procedure. *Thermal* (imaging) is expanded to denote a system that displays images (Glossary, Appendix B). It is such an established term that 'imaging' is routinely omitted. The loan translation *θερμικοί αισθητήρες* is followed by the clarification of the existence or not of a cooling system.

Example: 8 (line 17)	*Type*: compounding, derivation, acronymy	*Strategy*: SN1,4

Noun	**Noun**		**Noun**	
	Morphemes		**Morphemes**	
	Free	**Bound**	**Free**	**Bound**
		Suffix		**Suffix**
[laser	design(*ate*)	ation]	capab-(*le*)- il	ity
			Head	
Translation	**δυνατότητα επισήμανσης στόχων με ακτίνες λέιζερ**			
Back-translation	target designation capability with laser beams			

Laser is a lexicalized acronym (Glossary, Appendix B), a direct loan in Greek, and pronounced as a single word. *Ακτίνες* (*beams*) is added here for stylistic reasons. Along

with *designation* (example 15) they modify the noun *capability*. *Στόχων* (*targets*) is added to clarify the thing "designated".

Example: 9 (Fig.13) (*all figures refer to Appendix A*)	*Type*: compounding, acronymy, expansion	*Strategy*: SN1,3

Epithet	**Noun**	**Noun**		**Noun**	
		Morphemes		**Morphemes**	
		Free	**Free**	**Free**	**Bound**
		Adj	**Noun**	**Noun**	**Suffix**
Integrated	[Laser]	[White	Light]	Point	er
				Head	
Translation	**Προσαρτώμενος καταδείκτης λέιζερ λευκού φωτός**				
Back-translation	Attachable laser white-light pointer				

Modifiers-allocation type. *Integrated* is translated as *προσαρτώμενος* (*attachable*) to indicate that the device is a removable and not an integral part of the weapon. *Pointer* is used as a weapon-sight (Glossary, Appendix B). It comes from 'it *points* with a *white-light* (to the target)' (FSP). It is an expansion of the index-hand/rod that uses a laser beam instead of a wooden/metal/plastic stick/needle. (for *laser*, see example 8)

Example: 10 (Fig.6)	*Type*: compounding, metaphor, expansion	*Strategy*: SN1,4

Epithet	**Noun**	**Noun**	**Noun**
Enhanced	[Night	Vision]	Goggles
			Head
Translation	**Εξελιγμένες διόπτρες νυχτερινής παρατηρήσεως**		
Back-translation	Enhanced night observation goggles		

The electro-optical device *Goggles*, translated by the context-bound co-hyponym *διόπτρες*, is an expansion of the superordinate eye-protective 'spectacles' (προστατευτικά 'γυαλιά'). *Night Vision* is a metaphor, since man's sense 'vision' is "available" only in daylight and not at night. *Όραση* (*vision*) is related to φώς *της ημέρας* (*daylight*) and it is translated with the unmarked *παρατήρηση* (*observation*). *Εξελιγμένες* is a near equivalent of *Enhanced*.

Example: 11 (Fig.10)	*Type*: compounding, derivation conversion of grammatical category	*Strategy*: SN 2,3

Noun		**Noun**	**Noun**				
			Morphemes				
Free	**Bound**		**Free**	**Bound**			
Verb	**Suffix**		**Verb**	**Suffix**			
Aim	ing	Light	Illuminat-(*e*)	or		*Translation*	**Σκοπευτικό Φως/ Συσκευή φωτισμού**
		Head				*Back-translation*	Aiming light/ Lighting device

The noun *Aiming* is a conversion of the verb (to) *aim* classifying the *Light*; *Σκοπευτικό Φως* is a direct loan. The translation of English nouns formed with the suffix *–or* denoting devices that perform the action of the verb are usually accompanied by the term *συσκευή* (*device*).

Example: 12 (Fig.12)	*Type*: compounding, acronymy	*Strategy*: SN 2,3

Noun	**Noun**		**Noun**			
	Morphemes					
	Free	**Free**				
	Noun	**Noun**				
Laser	[Bore	Light]	System		*Translation*	**Σκοπευτικό Φως Κάννης Λέιζερ**
			Head		*Back-translation*	Laser Bore-Light Sight

Bore (Glossary, Appendix B) is the part where a pointer (example 9) is attached. The multi-word is loan-translated. The meaning of the omitted *System* is incorporated in the addition *Σκοπευτικό* (S*ight*).

Example: 13 (Fig.15)	*Type*: compounding, derivation, acronymy	*Strategy*: SN3,4

Noun		**Noun**	**Noun**					
Morphemes			**Morphemes**					
Bound	**Free**		**Free**	**Free**	**Bound**			
			Noun	**Verb**	**Suffix**			
Bi-(*n*)	ocular	[Laser]	Range	find	er		*Translation*	**Διοφθαλμικό αποστασιόμετρο λέιζερ**
			Head				*Back-translation*	Binocular Laser Rangefinder

Modifiers-allocation type. *Bi-* is routinely translated as *δι-* when it has the sense of ‘two, doubly, in two ways’; e.g. bi-lingual (δί-γλωσσος), bi-phasic (δι-φασικός), bi-plane (δι-πλάνο). *Ocular* (*οφθαλμός*) is a formal medical term. Thus, *Binocular* is loan-translated as *διοφθαλμικό*. In Greek military register, *Rangefinder*, which means ‘a (measurement) device that *finds* the *range* (between the gunner and the target)’ (FSP), is loan-translated as *αποστασιόμετρο*. The officialese adjective *ευρών* (*finder*) denoting someone that

performs the action *βρίσκω* (to find) is unmarked for persons who find something that has been lost. '*Αποστασιό-μετρο*' is an extension of 'τηλέ-μετρο' (tele-meter) where *απόσταση* is the military-equivalent of *range* (Glossary, Appendix B). (*laser* example 8)

Example: 14 (Fig.16)	*Type*: compounding, borrowing, derivation, acronymy	*Strategy*: SN3,4

Noun		**Noun**		
Morphemes		**Morphemes**		
Bound	**Free**	**Noun**		**Bound**
Prefix	**Noun**	**Free**	**Free**	**Suffix**
Micro	Laser	Range	find	er
		Head		

Translation	**Αποστασιόμετρο μικρο-λέιζερ**
Back-translation	Micro-laser rangefinder

A loan translation. The prefix *Micro* is a borrowed item from Greek *Μικρό* (*small*). (*Laser, Rangefinder* examples 8,13)

Example: 15 (Fig.17)	*Type*: compounding, acronymy, derivation	*Strategy*: SN1,3,4

Adj		**Noun**	**Noun**		**Noun**		
Morphemes			**Morphemes**		**Morphemes**		
Free	**Free**		**Free**	**Bound**	**Free**	**Free**	**Bound**
Adj	**Noun**		**verb**	**Suffix**	**Noun**	**Verb**	**Suffix**
Light	weight	laser	**[[**designat-(*e*)	or**]**	Range	find	er**]**
			Head		**Head**		

Translation	**Ελαφρύ αποστασιόμετρο επισημαντής λέιζερ**
Back-translation	Lightweight laser designator rangefinder

Lightweight is translated as *ελαφρύ* (of *light* weight) and along with *laser* (example 8) qualifies a dual-capability device: *designation* and *rangefinding*. The compounding of *light* with *weight* prevents from misinterpreting *light*, as in 'brightness of light', with another source of light *laser*. *Designator* comes from '*designates* (targets) with *laser'* (FSP). A standard translation of *designator* is *συσκευή επισημάνσεως* (*designation device*). *Επισημαντής* denotes the thing performing the action of the verb *επισημαίνω* (designate). This coinage contributes to the formation of a concise term. (*rangefinder* examples 13)

Example: 16 (Fig.18)	*Type*: compounding, expansion, acronymy	*Strategy*: SN2,3,4

Noun	**Noun**		**Noun**	**Noun**	**Noun**
	Morphemes				
	Free	**Bound**			
	Verb	**Suffix**			
[Target	Acqui-(*re*)-s	ition**]**	Laser	**[**Observation**]**	Night
					Head
Translation	**Σύστημα νυχτερινής παρατήρησης και πρόσκτησης στόχου λέιζερ**				
Back-translation	Night observation and laser target acquisition system				

Acquisition, expanded to denote "targeting" in military register (Glossary, Appendix B), is loan-translated as *πρόσκτηση*. *Σύστημα* (*system*) unpacks the meaning; it is omitted in the ST, probably to allow a concise term. *Laser* (example 8) modifies only *Target Acquisition*.

5.2 Compounds and complex words

Culture specific

Example: 17 (line 3)	*Type*: compounding, derivation	*Strategy*: SC1

Noun	**Noun**		**Noun**
	Morphemes		
	Free	**Bound**	
		Suffix	
single	**[**acqui-(*re*)-s	ition	office**]**
			Head

Translation	**ανεξάρτητο γραφείο προμηθειών**
Back-translation	independent procurement office

A CT3,4-related compound. A type of procurement office established by the US Army for a specific purpose. The lack of a Greek hyponym is solved by the superordinate *προμηθειών* (*procurement*). *Single* has the sense of a "particular" or "independent" office. *Ανεξάρτητο* (*independent*) has the same propositional with but different expressive meaning from *single*.

Example: 18 (line 4)	*Type*: compounding, acronymy	*Strategy*: SC3

Noun	**Noun**	**Noun**	**Acronym**	**Noun**
Program	Executive	Office	(PEO)	Soldier
Translation	**Γραφείο προμηθειών PEO (Program Executive Office) Soldier**			
Back-translation	PEO (Program Executive Office) Soldier procurement office			

A CT4-related compound designating the name of a US Army procurement-department. Commonly, such terms are explained putting in brackets the English names. Here, the explanation of the acronym is put in brackets because it is used again later in the text.

Example: 19 (line 11)	*Type*: compounding	*Strategy*: SC3

Noun	**Noun**	**Noun**	**Noun**
Product	Manager	Sensors	Lasers
Translation	**Τμήμα Αισθητήρων και Συστημάτων Λέιζερ (Product Manager Sensors and Lasers)**		
Back-translation	Department of Sensors and Laser Devices (Product Manager Sensors and Lasers)		

A CT4-related multi-word designating the name of PEO's sub-department. The addition of *Τμήμα* (*Department*) explains the referent of the term. Only the key concepts are translated, *Sensors* with the equivalent *Αισθητήρες*, and *Lasers* (example 8).

General/technical

Example: 20 (line 6)	*Type*: derivation	*Strategy*: SC2

Verb				
Morphemes				
Bound	**Free**	**Bound**		
Prefix	**Verb**	**Suffix**	*Translation*	**αναθεωρεί**
re	envision	ing	*Back-translation*	reviews

The equivalent of *envision*, *οραματίζομαι*, has a different expressive meaning. It connotes an idealistic situation/world; e.g. a world free of hate and vice. *Αναθεωρεί* conveys better the meaning of the ST which is the reassessment of the specifications of the modern soldier.

Example: 21 (line 7)	*Type*: compounding	*Strategy*: SC4

Noun		**Noun**		
Morphemes				
Free	**Free**			
Noun	**Noun**			
war	fighting	needs	*Translation*	**ανάγκες** (του μαχητή)
		Head	*Back-translation*	the needs (of the fighter)

The translation should be considered in relation to the possessive form *Soldier's*. The omission of *Warfighting*, for stylistic reasons, is compensated with *μαχητή* (*fighter*) a hyponym of *soldier*.

Example: 22 (line 14)	*Type*: compounding	*Strategy*: SC1,2

Adv	**Adj**	**Noun**	**Noun**	**Noun**
[very	low]	[ambient	light]	conditions
				Head
Translation	**συνθήκες ιδιαίτερα χαμηλής ορατότητας**			
Back-translation	especially low visibility conditions			

A CT3-related multi-word. The literal translation of *ambient light* would "betray" a translated phrase. Thus, it is translated with *ορατότητας* (*visibility*) that belongs to the same register (environmental conditions). The lack of *ambient* is compensated earlier in the same sentence with *flight operations* (example 24) since, by default, such operations are conducted in the sky.

<u>Military terminologised multi-words</u>

Example: 23 (line 9)	*Type*: compounding	*Strategy*: SC1,2

Adj	**Classifier**	**Noun**	**Noun**
single	[integrated]	[combat	system]
			Head
Translation	**αυτόνομο ολοκληρωμένο σύστημα μάχης**		
Back-translation	autonomous integrated battle system		

Modifiers-allocation type. Apart from *single* the translation uses items of similar meaning and form. (s*ingle* example 1)

Example: 24 (line 9)	*Type*: compounding, derivation	*Strategy*: SC1,2

Epithet	**Noun**	**Noun**			
		Morphemes			
		Free	**Bound**		
			Suffix		
improved	[mission	flexib-(*le*)-il	ity]	*Translation*	**αυξημένη επιχειρησιακή ευελιξία**
		Head		*Back-translation*	increased operational flexibility

A modifier-allocation type, with a CT1-related problem. While *αποστολή* (*mission*) cannot be used here as a noun (to naturalize the translation), its synonym *επιχειρησιακή*

(*operational*), can. Similarly, *αυξημένη* (*increased*) sounds more natural than *βελτιωμένη* (*improved*).

Example: 25 (line 13)	*Type*: compounding, derivation, conversion	*Strategy*: SC2

Epithet	**Adj**		**Noun**	
	Morphemes		**Morphemes**	
	Free	**Bound**	**Free**	**Bound**
	Noun	**Suffix**	**Adj**	**Suffix**
increased	[situation	al	aware	ness]
			Head	

Translation	**πλήρη επίγνωση της τακτικής καταστάσεως**
Back-translation	full awareness of the tactical situation

Modifiers-allocation type. The conversion of noun *situation* (*κατάσταση*) to an adj is not feasible in Greek. The addition of *τακτικής* (*tactical*) is made for naturalness and accuracy. *Increased* (*αυξημένη*) is translated with the near equivalent *πλήρη* (*full*).

Example: 26 (line 14)	*Type*: compounding	*Strategy*: SC1,2

Noun	**Noun**
flight	operations
	Head

Translation	**αεροπορικές επιχειρήσεις**
Back-translation	air operations

A CT5-related multi-word. *Πτητικές* (*flight*) *επιχειρήσεις,* though semantically correct, is not used in Greek military register. The use of synonym *αεροπορικές* (*air*) is the standard term.

Example: 27 (line 16)	*Type*: compounding, conversion, derivation	*Strategy*: SC1,4

Noun		**Noun**	**Noun**	**Noun**	
Morphemes				**Morphemes**	
Free	**Bound**			**Free**	**Bound**
Noun	**Suffix**			**Adj**	**Suffix**
[surve-(*y*)-ill-	ance]	[fire	control]	capab-(*le*)-il	ity
				Head	

Translation	**δυνατότητα επιτήρησης και ελέγχου πυρός**
Back-translation	surveillance and fire control capability

A loan-translated multi-word. The verb *fire* is conversed to the noun “a fire”. The unaware translator might translate *fire* as *πυροβολισμού* (*shooting*) which though semantically correct it “stinks translation” (to use Greek translators’ jargon).

Example: 28 (line 16)	*Type*: compounding	*Strategy*: SC1,4

Epithet	**Noun**		**Noun**		**Noun**
	Morphemes		**Morphemes**		
	Free	**Free**	**Free**	**Bound**	
				Suffix	
degraded	**[**battle	field	visib-(*le*)-il	ity**]**	conditions
					Head
Translation	**περιορισμένης ορατότητας πεδίο μάχης**				
Back-translation	reduced visibility battlefield				

The translation is semantically equivalent but syntactically different to the ST. The omission of *conditions* contributes to the thematic structure of the sentence.

Example: 29 (line 16)	*Type*: compounding	*Strategy*: SC1

Noun	**Noun**	**Epithet**	**Noun**
individual	**[**crew	served**]**	weapons
			Head

Translation	**Ατομικό και ομαδικό οπλισμό**
Back-translation	Individual and crew served weapons

A standard translation, but in singular for stylistic reasons. The unaware translator might render *crew served* as **εξυπηρετούμενα από πλήρωμα* (*served by crew) which is false. The same would apply in the back-translation if *ομαδικό* was translated with the literal *team* (Glossary, Appendix B).

Example: 30 (line 17)	*Type*: compounding, conversion	*Strategy*: SC 1

Noun	**Noun**		**Noun**
	Morphemes		
	Free	**Bound**	
		Suffix	
maximum	**[**fir(*e*)	ing	distances**]**
			Head

Translation	**μέγιστο βεληνεκές**
Back-translation	**maximum range**

The unaware translator might translate *firing distances* as *'*αποστάσεις πυρός/πυροβολισμού*' (**distances of fire/shooting*). The back-translation shows that the writer of the text chose a near-synonym and not the standard term *range* (Glossary, Appendix B).

5.3 Combinations of 5.1& 5.2

Example: 31 (line 14)	*Type*: compounding, metaphor	*Strategy*: SN2, SC3,4

Noun		**Noun**	**Noun**	**Noun**	**Noun**
Morphemes					
Free	**Free**				
Noun	**Adv**				
[heads	up	display**]**	**[**flight	data**]**	information
					Head
Translation	**πληροφορίες δεδομένων πτήσης απεικονιζόμενες σε οθόνη στην θέα του χειριστή (HUD)**				
Back-translation	flight data information displayed on a screen in the pilot's field of view (HUD)				

The underlying verbs of '*heads up display*' are [(keep your) *head up* (and look at the) *display* (for data)]. A CT5-related multi-word whose expressiveness and compactness is lost in translation. The omission of *heads up* is compensated with the expression *στην θέα του χειριστή* (*in the pilot's field of view*) connoting that the pilot does not bow. The acronym HUD (Heads Up Display), routinely used in Greek translations without a further explanation, is best seen in relation to HDD (Glossary, Appendix B).

Example: 32 (line 17)	*Type*: compounding, acronymy, derivation, conversion	*Strategy*: SC2, SN3,4

Noun	**Noun**	**Noun**	**Noun**		
			Morphemes		
			Free	**Free**	**Bound**
			Noun	**Verb**	**Suffix**
laser	**[**target	location**]**	Range	find	ing
			Head		
Translation	**δυνατότητα εντοπισμού στόχων με αποστασιόμετρο λέιζερ**				
Back-translation	target location capability with laser rangefinder				

A CT5-related multi-word. *Rangefinding* denotes the action of *Rangefinder* (example 13). *Δυνατότητα* (*capability*) is a cohesive device between 'providing' and the multi-word, contributing to the sentence's thematic structure. (*laser* example 8)

Example: 33 (line 17)	*Type*: compounding, derivation, acronymy	*Strategy*: SC1, SN3,4

Noun		Noun	Noun			
Morphemes						
Bound	**Free**					
Adv	**Noun**					
infra	red	[laser]	technology		*Translation*	**Τεχνολογία υπέρυθρης ακτινοβολίας και ακτίνων λέιζερ**
			Head		*Back-translation*	Infrared radiation and laser beams technology

Technology refers to both nouns. '*Υπ-έρυθρων*' is a direct loan of '*infra-red*'. The prefix *infra-* (*υπ-*) (*under* or *below*) is productive, generating direct loans; e.g. *infrastructure* (υπ(*ο*)-δομή) and *infrasonic* (υπ(*ο*)-ηχητικός). *Ερυθρό* is a hyponym of 'κόκκινο' (red) connoting the color of blood. The genitive *υπέρυθρης* needs to be anchored to the noun *ακτινοβολίας* (*radiation*). (*laser* example 9)

Example: 34 (Fig.3)	*Type*: compounding, derivation, metaphor, borrowing	*Strategy*: SN1,3 SC1

Classifier		Noun	Noun	Noun			
Morphemes							
Bound	**Free**						
Prefix	**Noun**						
Mon-(*o*)	ocular	[Night	Vision]	Device		*Translation*	**Μονοφθαλμική συσκευή νυχτερινής παρατηρήσεως**
				Head		*Back-translation*	Monocular night observation device

Modifiers-allocation type. The prefix *Mon-* is a borrowing from Greek *μόνος* (one, single). *Μονοφθαλμική* is a direct loan of *Monocular* (cf. *binocular* example 13). *Μονοφθαλμική* is an expanded neologism of *μονόφθαλμος* (*one-eyed*) which is unmarked only for visually-impaired people. (*night vision* example 10)

Example: 35 (Fig.4)	*Type*: compounding, metaphor conversion of grammatical category	*Strategy*: SN1,4 SC2

Noun	Noun	Noun	Noun		Noun
			Morphemes		
			Free	**Bound**	
			Noun	**Suffix**	
Aviator	[Night	Vision]	[Imag-*e*	ing]	System
					Head
Translation	**Σύστημα νυχτερινής παρατηρήσεως και απεικόνισης στόχων χειριστών αεροσκαφών**				
Back-translation	Aviator's night observation and target imaging system				

A CT5-related multi-word. *Imaging* is the noun denoting the action of 'imager', a system that displays images. The genitive *απεικόνισης* meaning 'display of (target) images' is anchored to the noun *στόχων* (targets) indicating the thing displayed. *Aviator* is translated with the superordinate *χειριστών αεροσκαφών* (*aircraft operators*) and not 'πιλότος' (pilot) to indicate that the system is used by all crew-members (pilot, co-pilot, navigator). (*night vision* example 10)

Example: 36 (Fig.5)	*Type*: back-formation, compounding	*Strategy*: SN3, SC1,2

Epithet		**Noun**	**Noun**	**Noun**
Morphemes				
Free	**Free**			
Adj	**Noun**			
Light	weight	[Video]	[Reconnaissance	System]
				Head
Translation	**ελαφρύ σύστημα τηλεοπτικής αναγνώρισης**			
Back-translation	lightweight video reconnaissance system			

Reconnaissance (systems) in the army (are) is as old as the first war of humankind (e.g. foot patrols, secret agents, aircrafts). A newly-designed system of reconnaissance is through video. *Video*, a back-formation of 'videotape recorder', is lexicalized and translated with the adjective *τηλεοπτικής* (*televised*) which conveys the meaning of using a type of TV to locate an enemy or ascertain strategic features. (*lightweight* example 15)

Example: 37 (Figs.7,8,9)	*Type*: compounding, metaphor, expansion	*Strategy*: SC1,2, SN2,4

Adj	**Adj**	**Noun**	**Noun**
Light	[Thermal]	[Weapon	Sight]
Medium			
Heavy			
		Head	
Translation	**Ελαφρύ/μέσο/βαρύ θερμικό σκοπευτικό όργανο**		
Back-translation	Light/medium/heavy thermal imagery weapon sight		

Σκοπευτικό όργανο is the standard translation of *weapon sight*. The term is accompanied by a pictorial representation of the system, connoting that *light* (unlike example 11) refers to the system's weight and not to the natural agent 'light' that make things visible. See the easiness with which the soldier holds the weapon (as if carrying a tray) in contrast to Fig.8, where the soldiers holds the (crew-served) weapon with both his

hands, and Fig.9, where the soldier holds only an (apparently) heavy sight. (*Thermal* example 7)

Example: 38 (Fig.14)	*Type*: compounding, acronymy, derivation, back-formation	*Strategy*: SN1,2,3,4 SC1,3

Noun	**Noun**		**Noun**	**Noun**		**Noun**		**Noun**
	Morphemes			**Morphemes**		**Morphemes**		
	Free	**Free**		**Free**	**Free**	**Free**	**Bound**	
	Noun	**Adj**		**Adv**	**Noun**	**Verb**	**Suffix**	
Mini	**[**Eye-	Safe**]**	Laser	**[**Infra	red**]**	**[**Observ-(*e*)	ation	Set**]**
						Head		
Translation	**Μικρών διαστάσεων σύστημα παρατηρήσεως λέιζερ και υπέρυθρης ακτινοβολίας ακίνδυνο για την όραση του χειριστή**							
Back-translation	Small dimensions laser and infrared observation system harmless to the operator's vision							

A modifiers-allocation type with CT-3,5 related problems. *Mini* is a back-formation of 'miniature', a borrowing from the Italian 'miniatura'. Though *mini* could be loan-translated as 'μίνι', *Μικρών διαστάσεων* (*small dimensions*) is more formal. *Mini* should be seen in relation to the bigger "set" in Fig.17. The collocation *Eye-safe* (*μάτι-ασφαλές) (whose hyphenated morphology alludes to an innovative form) is impossible in Greek. It is translated with the paraphrase '*ακίνδυνο για την όραση του χειριστή*' (*harmless to the operator's vision*). (*laser*, *infrared* examples 9, 33)

5.4 Evaluating the translation

Newmark argues that the translation of an informative text is of high quality when 'it conveys the fact acceptably' (1995: 192). Thus, translator's first point of reference is dictionaries and glossaries; but English - Greek military ones are extremely rare. The "popular strategies of functional and descriptive equivalent and paraphrase" (Yiokari, personal communication) have been frequently used here.

The examples (the full item or its core units) for which a standard translation is given in established references are: **2,4,7,8,10,11,16,27,29,33,35,37**. These translations are expected to be widely accepted though occasionally challenged for stylistic reasons.

The examples whose translations have been based on established references are: **12,26**,**34**,**36,38**. In example **36**, *τηλεοπτικής* for *video* was a choice dictated by the dictionary-translation *σύστημα τηλεοπτικής κατευθύνσεως* (video guidance system). Similarly, in example **12**, *σκοπευτικό φως κάννης* for *bore light* was dictated by

‘σκοπευτικό κάννης for ‘bore sight’. These translations might be challenged but not in semantic terms.

The most complex and challenging examples are: 9,13/14/15/32,31. The search for *rangefinder* (examples **13/14/15/32**) in the 150.000 sub-corpus produced five instances, all translated with *τηλέμετρο*. The choice for *αποστασιόμετρο* was based on background knowledge of the field. This diversion with the corpus results hints at the need of reassessing the trustworthiness of the corpus. Item **31** is a characteristic example whose translation varies with the translator and the text. In example **9**, the translation of *pointer* should be tested for accuracy.

Other possible translations of **1,3,5,6,17,18,19,20,21,22,23,24,25,28,30** are expected to be as many as their translators. Finally, the marking (**[ ]**) of the semantic units has been aided by using the various corpora to test their collocability. The plethora of examples and lack of space and time in the present paper makes impossible the presentation of this procedure.

6. Conclusion

The most challenging aspect of this text has been multi-word items embedded with (semi)standard neologisms, leading to a subjective modification of their constituent parts. That is, the translation involved both productive and creative procedures, as it is revealed by the application of combined translation procedures. From this point of view, the translation lies somewhere between Niska’s preference for creativity and Bauer’s for productivity.

The scarcity of dictionaries and glossaries has been compensated by background knowledge of the subject acquired through extensive reading of various references over the past years. The use of Internet has been another source of looking for possible definitions of neologisms. There are indications that the corpus-based quality control of a translation is not a safe procedure.

Finally, there are two major implications for the translator. First, the starting point for translating a neologism and a complex/compound word should be the identification of the two-elements macro-structure and its modifier(s). Second, before attempting to translate technical texts it is absolutely imperative an extensive reading of related ST and TT to familiarize oneself with the field.

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Appendix A
Data Text

The Soldier as a System

(1) Historically, Soldier equipment has fit together more by coincidence than by design. **(2)** However, Technological advances have made possible the most significant transformation of Soldier equipment in half a century.

(3) The Army recognized the need to focus, refine, and leverage new technologies to benefit the Soldier and created a single acquisition office to champion this transformation to the 21st century warfighter.

(4) Program Executive Office (PEO) Soldier stood up in April 2002. **(5)** PEO Soldier's mission is to arm and equip Soldiers to dominate the full spectrum of peace and war, now and in the future. **(6)** To achieve this mission, the Army is re-envisioning the Soldier as a System. **(7)** The Soldier is the ultimate weapon, but until recently the Soldier's warfighting needs have not been considered as a single platform, functioning as a system and integrated with other systems in the same manner as larger systems. **(8)** PEO Soldier develops all aspects of Soldier equipment to be integrated, modular, interoperable, and mission-tailorable.

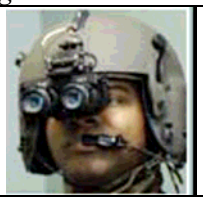
(9) The result is a single integrated combat system that enhances Soldier performance in all critical areas— increased effectiveness, decreased load, and improved mission flexibility—and enables continuous upgrades. **(10)** By managing the Soldier as a System, PEO Soldier will save Soldiers' lives, improve their quality of life, and increase their combat effectiveness. […]

(11) Product Manager Sensors and Lasers

(12) PM Sensors and Lasers (PM-SSL) enables Soldiers on the ground or in the air to "own the night" by providing them with the vision to enhance the lethality of weapon systems and provide situational awareness through:

• **(13)** Image intensification devices that provide Soldiers and aviators with improved night vision and increased situational awareness. **(14)** Aviation devices incorporate heads-up display flight data information, enabling flight operations under very low ambient light conditions and permitting focus outside the aircraft for increased safety.

(15) Enhanced Night Vision Goggles (ENVG) incorporates image intensification and thermal sensors into a combined image or overlay imagery.

		
AN/PVS-10	Night Vision Goggles PVS-7	Monocular Night Vision Device PVS-14
Figure 1	*Figure 2*	*Figure 3*
		
Aviator Night Vision Imaging System	Lightweight Video Reconnaissance System	Enhanced Night Vision Goggles
Figure 4	*Figure 5*	*Figure 6*

		
Light Thermal Weapon Sight (LTWS)	Medium Thermal Weapon Sight (MTWS)	Heavy Thermal Weapon Sight (HTWS)
Figure 7	*Figure 8*	*Figure 9*

• **(16)** Cooled and uncooled thermal sensors that also provide Soldiers with surveillance and fire control capability for individual and crew served weapons during degraded battlefield visibility conditions, enabling accurate detection, acquisition, and engagement of targets in all battlefield conditions.

• **(17)** Infrared and laser technology that enables Soldiers to use individual and crew served weapons at maximum firing distances, providing laser target location rangefinding as well as laser-designation capability.

		
Aiming Light/Illuminator AN/PAQ-4C	Aiming Light/Illuminator AN/PEQ-2A	Laser Borelight System
Figure 10	*Figure 11*	*Figure 12*
		
Integrated Laser White-Light Pointer	Mini Eye-Safe Laser Infrared Observation Set	Viper (Vector IV-Binocular Laser Rangefinder)
Figure 13	*Figure 14*	*Figure 15*
		
STORM Micro-Laser Rangefinder	Lightweight Laser Designator Rangefinder	Target Acquisition Laser Observation Night
Figure 16	*Figure 17*	*Figure 18*

* *The lines have been numbered and the pictures labelled Figure ^ for ease of reference.*

Appendix B

Glossary of Military Terms

Bore The hollow of a firearm barrel.

Crew-served weapons Weapons that are used and carried by more than a single person; e.g. heavy machine guns, mortars, artillery.

HDD (Head Down Display) A display (mainly in aircraft's cockpit) where the pilot has to look down in the console. The need for coining this term arose with the arrival of the HUD. It is remarkable the fact that HDDs were standard instruments in cockpits for a couple of decades before HUDs.

HUD (Head Up Display) A transparent glass-like display, placed on top of the cockpit's console, enabling the pilot to fly and get various information without having to look down in the cockpit. It revolutionized air-combat, especially in air fights with other aircrafts at very close distances, and in bombing at very low heights.

Individual weapons Weapons that are used and carried by a single person; e.g. pistols, rifles, sub-machine guns.

LASER (Light Amplification by Stimulated Emission of Radiation) A lexicalized acronym denoting a system that casts laser beams as a measuring or targeting means.

Range The distance between the viewer/soldier and the target.

Target acquisition The detection, identification, and location of a target in sufficient detail to permit the effective employment of weapons. *See also target analysis.*

Telemeter An apparatus for recording the readings of an instrument and transmitting them by radio.

Thermal Denotes a system that uses the thermal energy emitted from objects and persons to display their images.

Weapon Sights A fixed or detachable device fitted on weapons that enables the user to aim and shoot at the target.

Appendix C

Reference Corpus

Dictionaries

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Data Banks

- The Bank of English Corpus.
- The Institute for Language and Speech Processing (ILSP) Greek Corpus www.ilsp.gr. ISLP is a research organization under the auspices of the General Secretariat for Research and Technology (Ministry of Development) with the aim to support the development of Language Technology.
- Corpora of the Centre for the Greek Language. The Corpora includes texts published in the Greek newspaper "Μακεδονία". http://www.komvos.edu.gr/dictionaries/corpora/Corpora.htm
- A personally compiled Corpus of about 600,000 words consisting of texts across the whole range of the military register. A 150.000 words subcorpus (of the 600,000 one) of Parallel Texts (English-Greek) of about 150,000 words consisting of texts related to military-technical equipment.

Software

- Concapp Concodancer (Chris Greaves, 1993-2000).
- MultiConcord Parallel Concordancer (version 1.53 July 1998).