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Επιστημονικός φορέας

Το IEEE είναι ένας μη κερδοσκοπικός φορέας, ένας τεχνικός επαγγελματικός σύνδεσμος που αριθμεί περισσότερα από 426,000 μέλη σε 160 χώρες.

Ας δούμε: http://tinyurl.com/IEEEGreece

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Ποιοι είμαστε

GREECE

Μέλη (2015) :

Member Grade:	1245
Student Grade:	410
Associate Grade:	127
Affiliate Grade:	97
Senior Member Grade:	100
Fellow Grade:	14
Life F/S/M	27
Total:	**2020**

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Όλοι μας ξέρετε… αλλά πως;

- Νομίζετε ότι δεν γνωρίζετε το IEEE;

- Για σκεφτείτε λίγο περισσότερο…

IEEE 802.11

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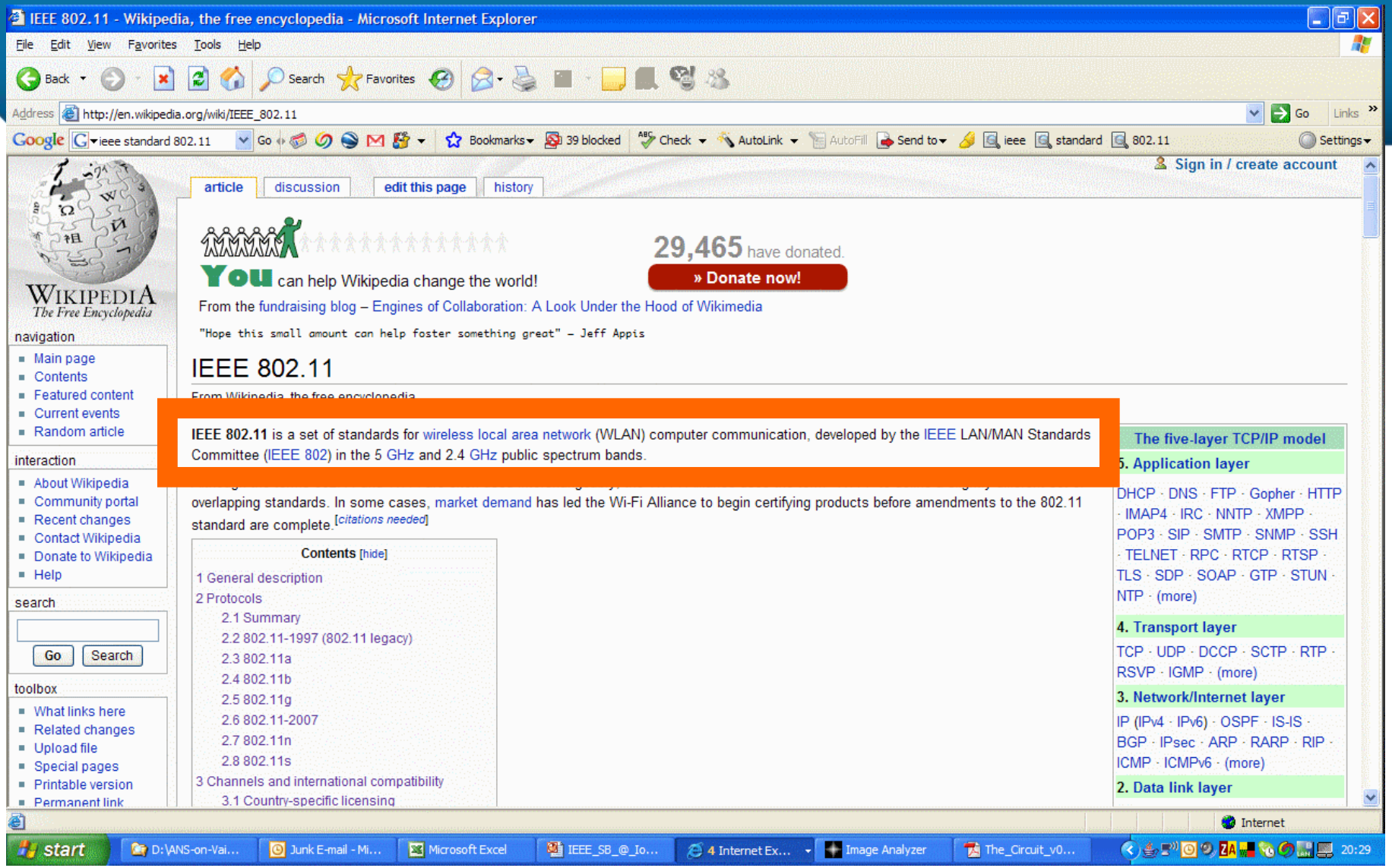

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General description [edit]

The 802.11 family includes over-the-air modulation techniques that use the same basic protocol. The most popular are those defined by the 802.11b and 802.11g protocols, and are amendments to the original standard. 802.11a was the first wireless networking standard, but 802.11b was the first widely accepted one, followed by 802.11g and 802.11n. Security was originally purposefully weak [1] due to export requirements of some governments, and was later enhanced via the 802.11i amendment after governmental and legislative changes. 802.11n is a new multi-streaming modulation technique that is still under draft development, but products based on its proprietary pre-draft versions are being sold. Other standards in the family (c–f, h, j) are service amendments and extensions or corrections to previous specifications.

802.11b and 802.11g use the 2.4 GHz ISM band, operating in the United States under Part 15 of the US Federal Communications Commission Rules and Regulations. Because of this choice of frequency band, 802.11b and g equipment may occasionally suffer interference from microwave ovens and cordless telephones. Bluetooth devices, while operating in the same band, in theory do not interfere with 802.11b/g because they use a frequency hopping spread spectrum signaling method (FHSS) while 802.11b/g uses a direct sequence spread spectrum signaling method (DSSS). 802.11a uses the 5 GHz U-NII band, which offers more non-overlapping channels than the 2.4 GHz band and usually less interference from non-802.11 devices.

The segment of the radio frequency spectrum used varies between countries. In the US, 802.11a and 802.11g devices may be operated without a license, as explained in Part 15 of the FCC Rules and Regulations. Frequencies used by channels one through six (802.11b) fall within the 2.4 GHz amateur radio band. Licensed amateur radio operators may operate 802.11b/g devices under Part 97 of the FCC Rules and Regulations, allowing increased power output but not commercial content or encryption.[2]

Optical fiber · Coaxial cable · Twisted pair · (more)

This box: view · talk · edit

A Linksys Residential gateway with an 802.11b radio and a 4-port ethernet switch.

A Compaq 802.11b PCI card

Protocols [edit]

Summary [edit]

Protocol	Release Date	Op. Frequency	Throughput (Typ)	Data Rate (Max)	Modulation Technique	Range (Radius Indoor) Depends, # and type of walls	Range (Radius Outdoor) Loss includes one wall
Legacy	1997	2.4 GHz	0.9 Mbit/s	2 Mbit/s		~20 Meters	~100 Meters

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IEEE 754

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Anatomy of a floating-point number [edit]

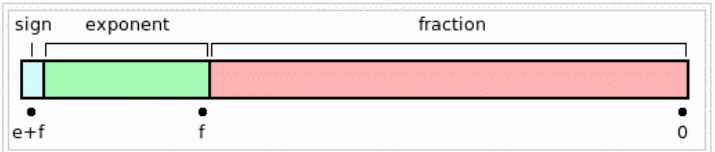
Following is a description of the standards' format for floating-point numbers.

Bit conventions used in this article [edit]

Bits within a word of width W are indexed by integers in the range 0 to W−1 inclusive. The bit with index 0 is drawn on the right. The lowest indexed bit is usually the lsb (Least Significant Bit, the one that if changed would cause the smallest variation of the represented value).

General layout [edit]

Binary floating-point numbers are stored in a sign-magnitude form where the most significant bit is the sign bit, *exponent* is the biased exponent, and *"fraction"* is the significand minus the *most significant bit*.



The three fields in an IEEE 754 float

Exponent biasing [edit]

The exponent is biased by $2^{e-1}-1$. See also Excess-*N*. Biasing is done because exponents have to be signed values in order to be able to represent both tiny and huge values, but two's complement, the usual representation for signed values, would make comparison harder. To solve this the exponent is biased before being stored, by adjusting its value to put it within an unsigned range suitable for comparison.

For example, to represent a number which has exponent of 17, *exponent* is $17 + 2^{e-1}-1$. Assuming $e = 8$, the exponent is equal to $17 + 128 - 1 = 144$.

Cases [edit]

The most significant bit of the significand (not stored) is determined by the value of *exponent*. If $0 < exponent < 2^e - 1$, the most significant bit of the *significand* is 1, and the number is said to be *normalized*. If *exponent* is 0, the most significant bit of the *significand* is 0 and the number is said to be *de-normalized*. Three special cases arise:

1. if *exponent* is 0 and *fraction* is 0, the number is ±0 (depending on the sign bit)
2. if *exponent* = $2^e - 1$ and *fraction* is 0, the number is ±infinity (again depending on the sign bit), and
3. if *exponent* = $2^e - 1$ and *fraction* is not 0, the number being represented is not a number (NaN).

This can be summarized as:

Type	Exponent	Fraction
Zeroes	0	0

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Επιστημονικός οργανισμός

- Ένα σύνολο ανθρώπων με επιστημονικό υπόβαθρο (συνήθως κοινό) με κοινό στόχο την ενίσχυση του κλάδου τους μέσω της γνώσης, της δημιουργίας πολιτικών, των συνεργασιών και της αειφορίας

  - Η περίπτωση του IEEE είναι ακριβώς αυτό που περιγράφηκε νωρίτερα.

  - Ποιος όμως ο ουσιαστικός ρόλος τους; Πώς επιτυγχάνεται η αειφορία;

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Κοινωνία και οικοσυστήματα

- Υπηρετούμε τα μέλη μας και κατ' επέκταση την κοινωνία.
- Συνεισφέρουμε δημιουργικά στην ανάπτυξη νέων ιδεών, τεχνολογιών, λύσεων.
- Εκπαιδεύουμε τους μελλοντικούς ανθρώπους που θα γίνουν μέλη των οργανισμών μας.
- Συνεργαζόμαστε προς την κλιμάκωση του αποτελέσματος.

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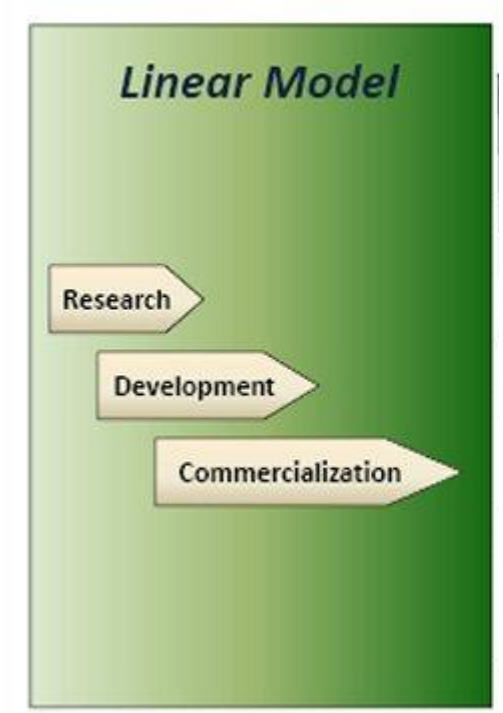
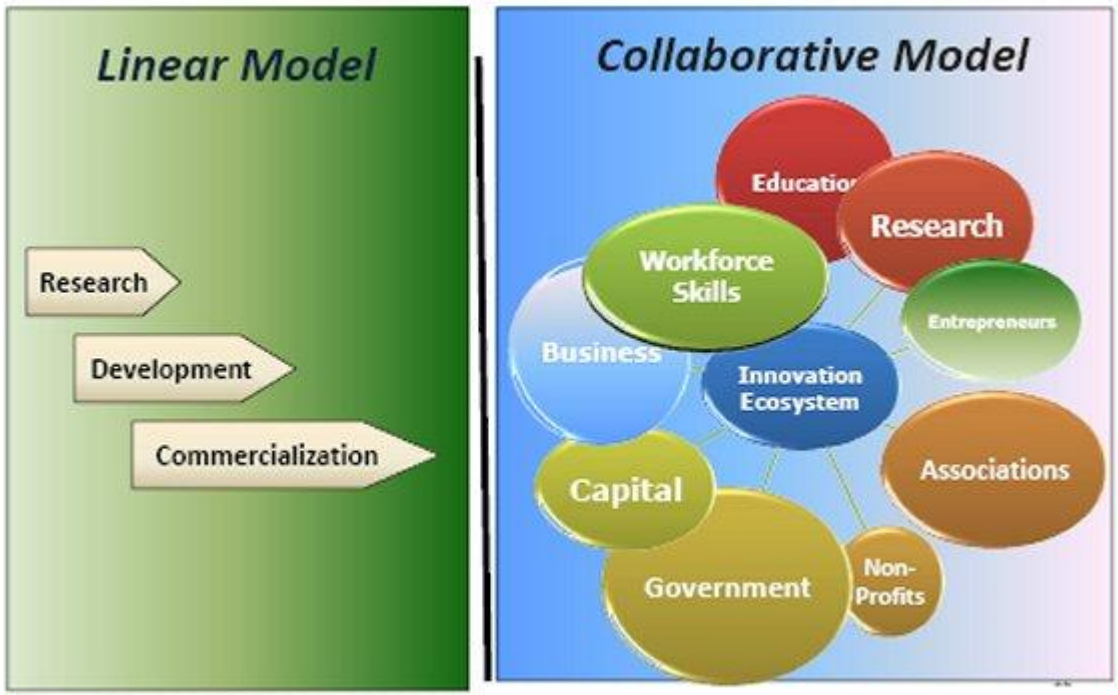


Ανάπτυξη;



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Ανάπτυξη

- Δεκάδες προγράμματα στήριξης σε φτωχές και αναπτυσσόμενες χώρες
- Υποστήριξη της εκπαίδευσης μέσω των εκπαιδευτικών πρωτοβουλιών TISP, EPICS κ.ο.κ.
- Θεσμοθέτηση διαγωνισμών, διακρίσεων και υποτροφιών (ήδη η Ελλάδα συμμετέχει κάθε χρόνο)
- Υποστήριξη τρίτων σε κοινά έργα (TryEngineering.org, Trycomputing.org κ.α.)

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Προγράμματα

IEEE SIGHT

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Engineering Projects In Community Service

2016 SILICON VALLEY TECH INDUSTRY SUMMIT by IEEE

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Εθελοντικός οργανισμός

- Ελληνικό Παράρτημα (Greece IEEE Section) που αποτελείται από τα μέλη του IEEE στην Ελλάδα.

- Παρουσία σε όλα σχεδόν τα Ανώτατα Εκπαιδευτικά Ιδρύματα της χώρας
  - Technical Societies
  - Affinity Groups
  - Student Branches
  - …

Δραστηριότητες

- Συνέδρια (κατά μέσο όρο 20 ανά χρόνο) προσελκύοντας 10.000+ επισκέπτες/σύνεδρους.

Δραστηριότητες

- Σεμινάρια TISP, Arduino, Robotics, coding …

Δραστηριότητες

- Δημιουργούμε δίκτυα φοιτητών ενισχύοντας την δημιουργικότητα

3rd Hellenic Student and Young Professionals Congress
IEEE Thessaloniki 2015

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Δραστηριότητες

- Δημιουργούμε δίκτυα επιστημόνων μέσω των chapters
  - Ενδεικτικά
  - Computer Chapter
  - Education Chapter
  - Circuits and Systems Chapter
  - Consumer Electronics Chapter
  - Signal Processing Chapter
  - Control & Systems Chapter
  - Power & Energy Systems Chapter
  - ….

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