A Message from the Editor-in-Chief: New EDICS Categories for the TRANSACTIONS

SIGNAL processing is a highly dynamic and far-reaching field. Over the years, it has evolved into a fascinating blend of theoretical studies, algorithm and filter design, performance analysis, and applications. Its tools have proven essential in modeling and analyzing the performance of a wide range of problems in several areas of heightened interest including, but not limited to, wireless and multi-input multi-output (MIMO) communications, wireless networks, sensor networks, and biomedical signal processing. In an effort to recognize the widespread influence of signal processing, as well as the various strong research trends in the field, we have embarked on a revised Editor's Information Classification Scheme (EDICS) for the TRANSACTIONS. The EDICS are meant to describe, broadly, the areas of interest of the TRANSACTIONS. They also help facilitate the assignment of papers to associate editors and reviewers, who are experts in the topic of each submission. The signal processing fields are dynamic, and thus, the EDICS also are dynamic and should be adjusted regularly in order to reflect and capture the interests of our authors and researchers.

The new EDICS for the TRANSACTIONS are the result of an extensive consultation process carried out by the Editor-in-Chief with the various Technical Committees of the IEEE Signal Processing Society, the Publications Board of the Society, and with the Editorial Board of the TRANSACTIONS. In its April 2004 meeting in Boston, MA, the Publications Board of the IEEE Signal Processing Society approved our proposed plan for the new EDICS. The EDICS now comprise 14 broad categories with several sub-EDICS under each category. All sub-EDICS within a category have a consistent theme. A new numbering system is used for the sub-EDICS. The 14 EDICS categories follow:

1) Statistical Signal Processing (**SSP**).
2) Adaptive Signal Processing (**ASP**).
3) Digital Signal Processing (**DSP**).
4) Nonlinear Signal Processing (**NSP**).
5) Multidimensional Signal Processing (**MDS**).
6) Machine Learning (**MAL**).
7) Sensor Array and Multichannel Processing (**SAM**).
8) Signal Processing for Communications (**SPC**).
9) MIMO Communications and Signal Processing (**MSP**).
10) Signal Processing for Sensor Networks (**SEN**).
11) Signal Processing for Wireless Networks (**WIN**).
12) Biomedical Signal Processing (**BIO**).
13) Implementation of Signal Processing Systems (**HDW**).
14) Other Areas and Applications (**OTH**).

The complete listing of the categories and their sub-EDICS appears below.

STATISTICAL SIGNAL PROCESSING (SSP)

SSP-a	Filtering
SSP-b	Detection
SSP-c	Parameter estimation
SSP-d	Tracking algorithms
SSP-e	Classification methods
SSP-f	Performance analysis and bounds
SSP-g	Statistical signal analysis
SSP-h	Spectral analysis and spectral estimation
SSP-i	Nonstationary statistical signal processing
SSP-j	Cyclostationary signal analysis
SSP-k	Higher order statistical methods
SSP-l	Deconvolution
SSP-m	Signal separation
SSP-n	Signal restoration
SSP-o	Non-Gaussian signals and noise
SSP-p	Signal and noise modeling
SSP-q	Hierarchical models and tree structured signal processing
SSP-r	System identification
SSP-s	System modeling
SSP-t	Nonparametric methods
SSP-u	Applications of statistical signal processing techniques

ADAPTIVE SIGNAL PROCESSING (ASP)

ASP-a	Adaptive filter analysis and design
ASP-b	Fast algorithms for adaptive filtering
ASP-c	Frequency-domain and subband adaptive filtering
ASP-d	Applications of adaptive filters

DIGITAL AND MULTIRATE SIGNAL PROCESSING (DSP)

DSP-a	Filter design and structures
DSP-b	Filterbank design and theory
DSP-c	Multirate processing and multiresolution methods
DSP-d	Wavelets theory and applications
DSP-e	Quantization effects and roundoff analysis
DSP-f	Sampling, extrapolation, and interpolation
DSP-g	Signal reconstruction
DSP-h	Fast algorithms for digital signal processing
DSP-i	Algorithm analysis
DSP-j	Applications of digital and multirate signal processing

NONLINEAR SIGNAL PROCESSING (NSP)

NSP-a	Nonlinear signals and systems
NSP-b	Rank-order and median filters
NSP-c	Morphological signal and system analysis
NSP-d	Polynomial signal processing
NSP-e	Chaotic and fractal signals and systems
NSP-f	Nonlinear system identification; linearization
NSP-g	Nonlinear random process models
NSP-h	Applications of nonlinear signal processing

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MULTIDIMENSIONAL SIGNAL PROCESSING (MDS)

MDS-a Filtering
MDS-b Spectral estimation
MDS-c Signal and system modeling and identification
MDS-d Algorithms and transforms
MDS-e Applications of multidimensional signal processing

MACHINE LEARNING (MAL)

MAL-a Learning theory and algorithms
MAL-b Bayesian learning; Bayesian signal processing
MAL-c Sequential learning; sequential decision methods
MAL-d Information-theoretic learning
MAL-e Neural network learning
MAL-f Graphical and kernel models
MAL-g Source separation
MAL-h Independent component analysis
MAL-i Bounds on performance
MAL-j Pattern recognition and classification
MAL-k Intelligent multimedia and web processing
MAL-l Applications of machine learning

SENSOR ARRAY AND MULTICHANNEL PROCESSING (SAM)

SAM-a Array calibration
SAM-b Source detection
SAM-c Beamforming
SAM-d Direction-of-arrival estimation and source localization
SAM-e Synthetic aperture methods
SAM-f Space-time adaptive methods
SAM-g Nonwave-based array processing
SAM-h Performance analysis
SAM-i Radar signal processing
SAM-j Sonar signal processing
SAM-k Geophysical and seismic signal processing
SAM-l Remote sensing of the environment
SAM-m Multichannel processing
SAM-n Imaging with array data
SAM-o Applications of sensor and array multichannel processing

SIGNAL PROCESSING FOR COMMUNICATIONS (SPC)

SPC-a Channel characterization and modeling
SPC-b Channel estimation and equalization
SPC-c Blind/semiblind estimation and equalization
SPC-d Signal representation, coding, and compression
SPC-e Scalar and vector quantization
SPC-f Space-time coding, design, and analysis
SPC-g Detection, estimation, and demodulation
SPC-h Modulation and encoding
SPC-i Performance analysis and bounds
SPC-j Interference suppression and rejection
SPC-k Acquisition, synchronization, and tracking
SPC-l Multicarrier, OFDM, and DMT communications
SPC-m CDMA and spread spectrum communications
SPC-n Ultra wideband communications
SPC-o Telephone networks and digital subscriber loops
SPC-p Broadband and packet switched networks
SPC-q Applications involving signal processing for communications

MIMO COMMUNICATIONS AND SIGNAL PROCESSING (MSP)

MSP-a MIMO precoder/decoder design
MSP-b MIMO capacity and performance
MSP-c MIMO space-time coding and capacity maximization
MSP-d MIMO space-time coding and decoding algorithms
MSP-e MIMO channel estimation and equalization
MSP-f MIMO channel modeling
MSP-g MIMO multi-user and multi-access schemes
MSP-h Applications of MIMO communications and signal processing

SIGNAL PROCESSING FOR SENSOR NETWORKS (SEN)

SEN-a Data fusion from multiple sensors
SEN-b Distributed signal processing
SEN-c Distributed control and feedback mechanisms
SEN-d Collaborative signal processing
SEN-e Power control algorithms
SEN-f Adaptive sensing algorithms
SEN-g Distributed channel and source coding
SEN-h Information-theoretic studies
SEN-i Source localization in sensor networks
SEN-j Applications of sensor networks

SIGNAL PROCESSING FOR WIRELESS NETWORKS (WIN)

WIN-a Cross-layer design
WIN-b Scheduling and queuing protocols
WIN-c Cooperative networking
WIN-d Resource management issues
WIN-e Physical layer issues
WIN-f System level optimization
WIN-g Information-theoretic studies
WIN-h *Ad hoc* wireless networks
WIN-i Applications involving signal processing for wireless networks

BIOMEDICAL SIGNAL PROCESSING (BIO)

BIO-a Bioinformatics
BIO-b Genomics/proteomics signal processing
BIO-c Life sciences signal processing
BIO-d Biological modeling
BIO-e Medical diagnostic methods
BIO-f Signal processing methods for medical aids
BIO-g Sensor arrays for medical signal and image processing
BIO-h Spectral methods for biosignals
BIO-i Applications of biomedical signal processing

IMPLEMENTATION OF SIGNAL PROCESSING SYSTEMS (HDW)

HDW-a Programmable and reconfigurable DSP architectures
HDW-b System-on-chip architectures for signal processing
HDW-c Algorithm and architecture co-optimization
HDW-d Compilers and tools for DSP implementation
HDW-e DSP algorithm implementation in hardware and software
HDW-f Low-power signal processing techniques and architectures

OTHER AREAS AND APPLICATIONS (OTH)

OTH-a Industry technology
OTH-b Signal processing education
OTH-c Emerging techniques

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