A Corrigendum to " Soft Regular Generalized b- closed Sets in Soft Topological Spaces"

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Abstract *In this paper, we prove that every subset of a given soft topological space is a soft regular generalized b- closed set. It is a correction for the papers [4] and [5].*

Keywords: *soft set, soft rgb-closed set, soft regular open set, soft b- open set.*

I. INTRODUCTION AND PRELIMINARIES

D. Molodtsov [1] introduced the concept of soft set theory. In [2] the notion of soft regular open set was introduced . Akdag and Ozkan [3] introduced and studied soft b-open sets.
The main purpose of this paper is to prove that every subset of any soft topological space is soft regular generalized b- closed (briefly Srgb- closed) set. Hence every type of known soft generalized closed set is soft rgb- closed and most of the results of [4], [5] are trivial. Let X be an initial universe and E be a set of parameters. Let P(X) denote the power set of X and A be a non-empty subset of E. A pair (F, A) is called a soft set over X where F is a mapping F: A $\rightarrow$ P(X) [1], [6]. Let (F, A) be a soft set over X, the soft closure of (F, A) and soft interior of (F, A) will be denoted by Scl(F,A) and Sint(F,A) respectively.

Definition 1.1 A soft set (F,A) in a soft topological space (X, τ , E) is called

1- Soft regular open [2] if (F,A)= Sint(Scl(F,A)).
2- Soft b- open [3] (F,A) $\tilde{\subseteq}$ Scl(Sint(F,A)) $\tilde{\bigcup}$ (Sint(Scl(F,A)).
3- soft semi open [7] if (F,A) $\tilde{\subseteq}$ Scl(Sint(F,A)).
4- soft pre-open set [3] if (F,A) $\tilde{\subseteq}$ Sint(Scl(F;A)).

Definition 1.2[7] Let (X, τ , E) be a soft topological space. (F, A) is subset of X**,** then the intersection of all soft semi-closed (resp. soft pre-closed) sets over X containing (F, A) is called soft semi-closure (resp. soft pre-closure) of (F, A) and it is denoted by Sscl(F, A)(resp. Spcl(A,F)).

Definition 1.3 [3] Let (X, τ , E) be a soft topological space. (F, A) is subset of X**,** The union of all soft b-open sets over X contained in (F,A) is called soft b-interior of (F, A) and it is denoted by Sbint(F, A), the intersection of all soft b-closed sets over X containing (F, A) is called soft b-closure of (F, A) and it is denoted by Sbcl(F, A).

II. EVERY SUBSET OF A SOFT TOPOLOGICAL SPACE IS SOFT REGULAR GENERALIZED B- CLOSED.

Definition 2.1[4] Let (X, τ , E) be a soft topological space. A subset (F, A) of X is said to be soft regular generalized b-closed (briefly, $Srgb$- closed) if Sbcl(F, A) $\tilde{\subseteq}$ (G,B) whenever (F, A) $\tilde{\subseteq}$ (G,B) and (G,B) is soft regular open subset of X.

Lemma 2.2 Let (X, τ , E) be a soft topological space and (F, A), (G, B) are subsets of X, then
(F,A) $\tilde{\subseteq}$ (G,B) implies Sbcl(F,A) $\tilde{\subseteq}$ Sbcl(G,B).
Proof. Follows from definition.

Lemma 2.3 Let (F, A) be a soft set in a soft topological space X. Then

1- Sscl(F, A)= (F, A) $\tilde{\bigcup}$ Sint(Scl (F, A)) [4].

2- Spcl(F, A)= (F, A) $\tilde{\bigcup}$ Scl(Sint (F, A))[4].

3- Sbcl(F, A)= (F, A) $\tilde{\bigcup}$ [Scl(Sint (F, A)) $\tilde{\bigcap}$ Sint(Scl (F, A))] [3].

Theorem 2.4 Let (X, τ , F) be a soft topological space, then every subset of X is Srgb- closed.

Proof. Let (F,A) be a subset of X and (G,B) be a soft regular open subset of X such that (F,A) $\tilde{\subseteq}$ (G,B). Hence Sbcl(F,A) $\tilde{\subseteq}$ Sbcl(G,B) by Lemma 2.2 . Now, by Lemma 2.3, Sbcl(G,B)= (G,B) $\tilde{\bigcup}$ (Sint(Scl(G,B)) $\tilde{\bigcap}$ Scl(Sint(G,B)))= (G,B) $\tilde{\bigcup}$ ((G,B) $\tilde{\bigcap}$ Scl(Sint(G,B))), since (G,B) is soft regular open. But ((G,B) $\tilde{\bigcap}$ Scl(Sint(G,B))) $\tilde{\subseteq}$ (G,B) $\tilde{\bigcap}$ Scl(G,B) = (G,B). Therefore Sbcl(F,A) $\tilde{\subseteq}$ (G,B). Thus (F,A) is Srgb-closed.

Remark 2.5

1- In [4], Theorems 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, 3.17, 3.18, 3.19, 3.20, 3.21, 3.23, 3.24, 3.25, 3.26 and 3.27 are trivial.

2- In [5] Definition 2.3(i) is trivial, since every function is soft rgb- continuous function also the definition of soft rgb-irresolute 2.3 (ii) is trivial. Theorem 2.6 of [5] is trivial and most of the results in [5] are trivial

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