J. Math. Kyoto Univ.
3-1 (1963) 81-84.

On existence of a resolved surface of a singular surface

To Professor Y. Akizuki on his 60-th birthday

By

Kayo OTSUKA

(Communicated by Prof. Nagata, July 22, 1963)

Throughout this paper, we shall mean by a surface either a projective surface or a complete surface. For a surface whose singularities are only isolated singular points, the notion of its resolved surface was introduced by J. E. Reeve and J. A. Tyrrell (see [2]), and they stated that the existence is not proved yet. Though the writer thinks that the existence is known practically by many people, because of the refered statement and also because of the lack of the published proof to the writer's knowledge, the writer likes to give an explicit proof of the existence. As a corollary we shall answer affirmatively a question raised by J. E. Tyrrell which asks if the following is true: when V_1 and V_2 are resolved surface of a given surface V, there is a resolved surface V_3 of V which dominates both V_1 and V_2.

Let V be a surface, and let V' be a non-singular surface which is birationally equivalent to V and dominates V. We denote by T the anti-regular map from V onto V'. If V' satisfies the following conditions 1)$\sim$4) then we shall say that V' is a *resolved* surface of V.

Let Ω^* be the set of all points of V' which correspond to singular points of V, then Ω^* is a closed set of V'.

1) T is biregular at every simple point of V.

2) Ω^* is pure of dimension one and each irreducible component of Ω^* is non-singular.